

# **Problem Based Learning**

## **Study Guide**

International Farm Management

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# Welcome

During the first year of the International Farm Management study programmes we work with the teaching method known as Problem-Based Learning (PBL). This study guide provides answers to the following questions:

- What is PBL?
- How does PBL work?
- What are the roles in PBL? And what do these involve?
- How will I be assessed?

This study guide is based largely on the work of Huub van Osch, Tamara Lohman and Gerard Gerritse. In 2013, it was edited by the PBL Coordinator of Tuin en Akkerbouw (Horticulture & Arable Farming), Sander van Delden. The new guide incorporates various passages from the book: 'Werken in onderwijsgroepen' (Working in tutorial groups) by J.H.C Moust and W. de Grave.

For further information about PBL, we recommend you consult the Blackboard digital learning environment (<https://hao.blackboard.nl>).

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# 1. Introduction

This module introduces you to Problem-Based Learning (PBL). The PBL approach for International Farm Management is explained during a short lecture. This is followed by the first PBL meeting.

PBL is a teaching method used especially in higher education. In groups of around 8 to 10 students and under the supervision of a tutor (coach/lecturer), you will work on PBL tasks (sometimes referred to as 'cases'). These PBL tasks come in the form of a problem to be solved: Hence the name "Problem-Based Learning". This educational approach places considerable demands on your own initiative to learn and manage your independent study.

Prior to beginning a PBL task you need to read the description of the problem carefully. In the first PBL group meeting, the 'kick off', you will analyse this problem together and then formulate your individual assignments for independent study. These assignments are referred to as 'main issues' and 'sub issues'. In-depth research will enable you to solve the sub issues and ultimately the main issue. In the case closure group meeting you report on your findings and, together, you will try and come up with a final solution to the problem.

A PBL task is completed in ten steps, following the so-called *10 Step Approach*. In the meetings the following roles are distinguished: Chairman, Board writer (or Scribe), Secretary (or Minute taker), Group members and Tutor. Chapter 5 'PBL in a nutshell' briefly outlines these roles and the 10 Steps. In §6.1 the 10 Steps are explained in more detail and further explanation of the different roles is given in §6.2.

## 2. Objectives

PBL is a student-centred educational approach for self-directed (independent) learning. There are several reasons why we work with PBL at the HAS University of Applied Sciences, the most important ones being:

- You learn to formulate questions independently.  
Research shows that this approach has a motivating effect and helps you bring the assignment to a successful conclusion.
- You are actively searching for information and acquiring knowledge.  
It increases the chance of making knowledge stick.
- You learn to discuss and collaborate in a group.  
Being able to discuss and communicate efficiently and effectively in a structured context are important skills, which will be a valuable asset during the rest of your course and in your career.
- You learn how to formulate newly acquired knowledge and to present it to a group.

To achieve these objectives you need numerous skills, for example:

**Personal development:** Self-reflection; giving effective feedback; learning to receive feedback; critical thinking and forming your own opinion.

**Social interaction and communication:** Giving a presentation; chairing a meeting; taking minutes; teamwork; time management; working to tight deadlines; conflict management and negotiating.

**Information management:** Gathering and searching for information; assessing information with respect to value and quality / comparative research (benchmarking); processing information; identifying essential information from large publications and readers; interview techniques; written and oral summarising; source acknowledgement; formulating a concrete 'plan' from independent and partially new concepts.

All of these will be useful skills to have after you have finished studying!

### 3. PBL assessment

Factual knowledge of the modules is assessed by means of a written exam at the end of the module. The active study method that PBL entails, should enable you to do well in the module knowledge tests. In addition to knowledge, we also assess your contribution to the PBL meetings. Here are some of things we will be watching for as tutors:

Your contribution to the process:

- Active participation
- Contribution to the group process
- How you perform in different roles (chairing a meeting, writing on the board, taking minutes)

Your factual contribution:

- The quality of your questions, analyses and comments
- Your concrete learning experiences, based on the results

Among other things, you will also be assessed on the depth you have managed to give to a PBL task. You can enhance this by making an active contribution during the PBL process, asking in-depth questions, contributing to the factual knowledge and placing demands on yourself and the other members of the group. In short, by wanting to learn as much as possible. Depth will not be achieved by aiming to use your independent study activities to come up with the minimum basic answer as quickly as possible: 'Cut-and-paste work' without any analysis will be very much frowned upon. You need to master the subject material yourself. You are responsible for the quality of your work. Although you carry out and document the tasks yourself, we will use various tasks to coach you in how to write a proper summary and assess if your work has sufficient depth and content. This will give you insight into what is expected of you and will help you prepare for the final exam. We will also continue to check your sources until they meet the required standards.

In short, you will receive regular individual feedback reports. If you are uncertain about your performance in PBL, you can always discuss this with your tutor or the PBL Coordinator.

In order to be able to perform the tasks well, you will need to spend around six to nine hours of independent study, depending on your work pace and prior knowledge.

## 4. PBL in a nutshell

### The 10 Steps

#### Preparation before a PBL meeting (Step 1)

##### **Step 1: Read the task, clarify terminology and define the main issue**

- Draw up a list of all the terminology in the text that are unclear and look each one up.
- Define the main issue: Capture the essence of the problem and define the scope of the subject.
- For some tasks you will need to read additional materials in advance.
- Without written preparation you will be excluded from participating in the task.

#### During a PBL kick-off meeting (Steps 2 to 7)

##### **Step 2: Discuss difficult terminology**

- Discuss definitions found of difficult terminology/concepts.

##### **Step 3: Define the main issue**

- Reach agreement about the main issue to be addressed.

##### **Step 4: Analyse the problem/brainstorm**

- Brainstorm extensively on the main problem! Make associations; activate prior knowledge in the group.
- React to contributions made by others: empty slogans are of little use on their own.
- Tip: Use mind mapping. Put the main issue (or a few keywords) in the centre of the board, and list the results of the brainstorm around it. This makes Step 4 much easier.

##### **Step 5: Systematically document the problem analyses**

- Structure the brainstorm ideas from Step 3 and link them. Use the mind map to visualise coherence between items by grouping them together, or by using colours, numbers or arrows.

##### **Step 6: Formulate sub issues**

- Formulate six to nine sub issues. At the end of the kick-off meeting, carry out a brief evaluation: Give Tips (areas for improvement) and Tops (things that went well) to improve the process and group members' performance in their roles.

##### **Step 7: Discuss how to tackle the independent study**

- Discuss briefly and succinctly which sources can be consulted, and define the deliverables for the case closure meeting.

#### After a PBL kick-off meeting (Step 8)

##### **Step 8: Carry out independent study**

- Look for answers to the sub issues and the main issue. Put these answers down in a concise two-page **written document**, in which you address the sub issues first, followed by the main issue.
- Identify your sources, as instructed by your English teacher during this block. Use multiple sources per sub issue.
- The Secretary writes up the minutes the same day as the kick-off and



makes sure everyone gets a copy. If anything is unclear, you should let the Secretary (and potentially the Tutor) know in time.

### During a PBL case closure meeting (Step 9 and 10)

#### **Step 9: Complete the task**

- Without written notes of your own research from your independent study you will not be allowed to participate in the case closure meeting. Not being able to hand in notes of your work will affect your assessment.
- Give feedback on the minutes. Discuss anything that is unclear.
- Report and discuss the answers to sub issues and the main issue. If you find mistakes or shortcomings, make notes in your work.

#### **Step 10: Evaluation of the process**

- At the end of the process you evaluate the task and the meeting, giving both Tips and Tops.

### Different roles during a PBL meeting

#### **Chairman**

- The chairman is usually a student; however, during the first task in module 1 the tutor takes on the role of chairman.
- The chairman provides structure, manages the time, asks enlightening questions, encourages the group and gives summaries at the right times.

#### **Board writer/Scribe**

- The board writer is a student. He or she writes all the relevant information on the board in a structured and legible way.

#### **Secretary/Minute taker (*only at the kick-off meeting*)**

- The secretary is a student. He or she writes structured minutes and sends these per email to students and the tutor that same day (see Appendix 1).

#### **Group member**

- Group members exchange information. They listen to each other critically and, together use the 10 Step approach to bring the assignment to a successful conclusion. To achieve this, it is essential that all group members play an active role.

#### **Tutor**

- The tutor is a teacher. He or she ensures that students work on their tasks correctly and with sufficient depth.
- The tutor is cautious about intervening to steer the process and only intervenes when the group is stuck or completely on the wrong track.
- The tutor gives regular feedback on the students' performance.

### General agreements

- The roles of chairman, board writer, tutor and group members are carried out by different members of the group for each new PBL task.
- The factual contribution by the chairman, board writer and secretary may be slightly less than that of the other group members, but not completely absent!
- Only the secretary is allowed to use a laptop or tablet during the kick-off meeting. Use of the laptop may not disrupt the process.
- Attendance at the meetings is compulsory.

**In the case of absence:**

- Report absence in advance to the tutor and the chairman. If you get delayed on your way to the HAS, please call or text a fellow group member, so he or she informs the rest.
- Make sure that somebody takes over your role as chairman, secretary or board writer, if necessary.
- Absence can lead to you needing to do catch-up work and/or may affect your assessment. Frequent absence may result in you not receiving a grade for PBL. Please, be aware that you are in charge, adopt a proactive attitude and make timely agreements with your tutor about how to deal with your absence.
- If a tutor is ill, the meeting will be held as planned!

## **5. PBL in detail**

### **5.1 The 10 Step approach in detail**

This chapter explains what is expected of you during and between PBL meetings per step. This chapter is important at the beginning of your course as it explains how PBL works. As your course proceeds, you can use this chapter to help you identify areas where you can still improve.

#### **5.1.1 Preparation before a PBL meeting: Step 1**

##### **Step 1: Read the task, clarify terminology and define the main issue**

###### **Read the task**

Read the full text of the task thoroughly. Then read the text for a second time and write down any difficult terminology.

###### **Clarify terminology**

If you have found difficult words and terminology, look them up and find out what they mean. Write down their meaning clearly as this will prevent confusion and misunderstanding during the PBL meeting. During the kick-off meeting make sure you address any vague or general concepts, whose meaning in the context of the task text is not immediately clear.

###### **Define the main issue**

In this step you need to convert the central problem in the task description to a concrete main issue. Write down this main problem and bring it with you to the PBL kick-off meeting.

###### **Read additional text**

For some tasks you need specific prior knowledge, as input for the kick-off meeting. You will be asked to read in advance an additional piece of text: from the module book, lecture notes or a book.

#### **5.1.2 During a PBL kick-off meeting: Steps 2 to 7**

During the kick-off meeting you should make an inventory of what knowledge is already present in the group that is relevant to the task. This encourages prior knowledge to be activated, and helps identify areas in which additional knowledge can be sought.

## **Step 2: Discuss difficult terms**

Explanations that have been found of difficult terms are discussed. This ensures the whole group starts from the same basis.

## **Step 3: Define the main issue**

In this step the individual suggestions for a main issue are compared, to reach an agreement about the best problem formulation. If this takes too long, select a temporary main issue, which you can change later in the meeting if necessary.

## **Step 4: Analyse the problem / brainstorm**

Knowledge, which can be used to solve the problem, is probably already present in the group: Basic knowledge or already an initial idea in the right direction towards solving the problem. This step is about refreshing knowledge and determining what is already present in the group (activating prior knowledge). Once this has been done, as many explanations, alternatives and/or hypotheses as possible are identified that lie at the root of the problem. It is therefore important that you ask specific questions about anything that is unclear or inconsistent. If you use mind mapping in Step 4 (see Appendix 2), you will have prepared a good start for Step 5.

## **Step 5: Systematically document problem analyses**

In this phase the information is structured. The components (knowledge and definitions of terminology and concepts) that have been made during the brainstorm session are linked and coherent relationships put together. The group can make use of mind mapping, or possibly other methods, to structure ideas and knowledge on the board. The mind map is used to visualise coherence between items by grouping them together, or by using colours, numbers or arrows. This step brings to light any aspects that are unclear or incomplete.

## **Step 6: Formulate sub problems**

During this step it becomes clear what knowledge is still missing in order to be able to address the main issue. During this step, the group works together to convert the structured problem analysis into sub issues for independent study. A sub issue needs to be unambiguous, specific and clearly defined. The next step involves everyone working on the same sub issues. Usually, between six and nine sub issues are drawn up per task.

## **Step 7: Discuss how to tackle the independent study**

Briefly and succinctly discuss which sources can be consulted and define the deliverables for the case closure meeting. In addition to a written report, you may be expected to present your results on a flip chart or in the form of a

presentation or photo collage. Together with your tutor, you determine the group's deliverables for Step 8. Sometimes it may be useful to work together on a flip chart or a PowerPoint presentation, discuss this together.

### **5.1.3 After a PBL kick-off meeting: Step 8**

#### **Step 8: Carry out independent study**

Independent study begins immediately after you have received the minutes of the kick-off meeting. Make sure that these are correct and complete. Using the sub issues as the basis, you need to acquire new knowledge. This knowledge needs to be looked up, read and understood. Work out a clear plan, so you are well prepared for the case closure meeting. Sometimes it may be useful to work in sub groups to make a flip chart or PowerPoint presentation.

#### **Step 8a: Select sources**

Check the module book for recommended sources and study materials for the task. Selecting additional resources is not easy. You need to look for relevant materials with sufficient content and depth. How you do this is explained during a lecture in block 1. Below you will find some tips for selecting sources:

- Focus on possible additional sources for the sub issues (books, magazines, readers, the internet and possibly specific people)
- Assess the sources you have found for their suitability (subject, author, target group, year of publication, etc.)
- Make an initial selection of sources

#### **Step 8b: Study resources**

You now need to try to apply this new information, to be able to address the sub issues.

- Study the sources from the perspective of the sub issues and main issue
- Ask yourself questions based on the materials you have studied, particularly with respect to their logic and arguments
- Look for coherence between the material studied and your prior knowledge
- Make notes and draw diagrams

#### **Step 8c: Prepare your report**

Write a report, in which you formulate the answers to the sub issues and the main issue. Make use of the information you found in Step 8b. Make sure you are able to orally present all your answers clearly and concisely (in your own words).

## 5.1.4 During a PBL case closure meeting

### Step 9: Complete the task

During a case closure meeting you check if the answers you found to the sub issues and the main issue are correct. All the participants in the PBL meeting, including the tutor, play an important role, and you are expected to adopt a critical attitude.

### Method

Using his or her own words, the chairman clearly defines the topic studied (i.e. not simply reading it out, but actively presenting it to the group).

You will find it useful to structure the meeting by discussing the answers found to the sub issues and the main issue behind the topic studied.

The chairman makes sure that everyone has his or her say and gets the opportunity to participate in the discussion of the answers the group has found.

The board may be used for diagrams, keywords and/or examples to support the discussion. You can also stick pages from the flip chart to the board.

Discuss the accuracy of the answers found.

Ask group members to state their sources. What is the knowledge based on?

Ask in-depth questions, to clarify any ambiguities.

Give additional information, if necessary.

Always make a critical comparison with your own new knowledge (with respect to depth, coherence and possible contradiction).

Make **notes** in your own report to correct any mistakes or omissions. The PBL subject material is often also exam material, so it is in your own interest to make as many notes as possible.

After the case closure meeting, you know if you have understood this new knowledge, or if you have studied the subject matter in sufficient depth and if you can explain the issues to others.

## 5.2 The different roles

### 5.2.1 Introduction

The success of a PBL meeting depends considerably on the interaction between the group members. Together you determine how well the group process works. By performing your role in a PBL meeting well, you can help create an enjoyable and instructive meeting. This chapter focuses on what is expected of you in each role (group member, chairman, board writer, secretary). You will also find a description of what you can expect from your tutor.

At the beginning of the course, you can use this chapter to learn more about what the different roles involve. As the course proceeds, it may help you identify any areas which need adjustment.

### 5.2.2 Chairman

As chairman (discussion leader), you provide the structure for the meeting. You ensure a logical flow and sequence of topics, and manage time during the meetings. In addition, it is your job as chairman to ensure the 10 Step approach is applied. You also need to manage the interaction and cooperation between group members. This will ensure that the group meetings are efficient and effective.

#### Preparation

The chairman's preparation includes:

- Thinking about possible difficulties in the task description
- Thinking about possible bottlenecks in the discussion

The main tasks **during** the meetings are:

#### Structuring

- Asking (open) questions
- Channelling input
- Drawing attention to both sufficient and insufficient depth and/or relevance
- Interrupting if necessary, or asking further questions
- Ensuring a proper representation of input by the board writer
- Summarising, to round off subjects clearly and concisely

## **Managing time**

Make sure you have a clock to keep track of the time. Make a clear schedule for the meeting for yourself.

## **Summarising**

Providing summaries gives the meeting structure and can be used to check that everything has been understood. Some tips for providing a summary:

- Give a short description of the essence of the subject matter
- Use the right timing:
  - After a confused, unclear discussion or flow of words
  - After a long discussion
  - To round off a subtopic

## **Encouraging**

Sometimes you may need to stimulate discussion, create a positive working environment within the group, or encourage proportionate and balanced input of group members. Here are some ways to achieve this:

- Ask questions loudly and clearly
- Refer to one subject at a time
- Spread your questions out
- Choose the right time to ask a question
- Invite a response or input using a non-verbal gesture
- Put differences in opinions - personal or regarding content - up for discussion and name them specifically as such
- Discuss the participation of group members, especially where this is disproportionate

## **Rounding off**

It is essential to round off the kick-off meeting properly. Everyone needs to understand the basis for their independent study. Your responsibilities as chairman in rounding off the meeting are:

- Check that the sub issues have been correctly formulated and recorded
- Repeat the agreements made
- Provide opportunity for evaluation, so make sure you manage the time well



### **5.2.3 Board writer/Scribe**

As the board writer, it is your responsibility to write what is said during the meetings on the board. In Step 4, 'Analyse the problem/brainstorm', you should write a lot: the more there is on the board, the better the input for Step 4. Of course, you should not go too far: Write clearly, concisely and coherently. In Step 4, you only leave out things that immediately appear to be irrelevant.

In Step 5, you visualise the structure on the board using colours, numbers, diagrams, etc. If you use mind mapping (Appendix 2), Step 4 and 5 can be partially combined as you decide where to write something. In the other steps, as the board writer, you can wait for the conclusions of the discussion before writing anything on the board.

Make sure you communicate clearly with the chairman and the other group members. Board writing is a responsibility shared by the whole group. As the board writer, you primarily determine what you write, but the others – in particular the chairman – should support you. This support includes:

- Giving instructions as to what could be written
- Providing feedback on what has been written

### **5.2.4 Secretary/Minute taker**

The secretary writes a detailed report of the kick-off meeting in Microsoft Word. In Appendix 1 you will find instructions on how to write the minutes. It is essential that the main issue (Step 3) is well documented. This also applies to the sub issues in Step 6. An accurate formulation of the main issue and the sub issues is vital for the quality and progress of the task. You also need to accurately document the recommended sources and the possible allocation of tasks in Step 7. Time pressure means this is often forgotten at the end of a meeting, but it is important.

It is often useful to combine Step 4, 'Analyse the problem/ brainstorm', and Step 5, 'Systematically document the problem analyses'.

Feel free to take a photo of the brainstorm and include it in the minutes.

As the secretary, you should write structured minutes and send these per email to the members of the group and the tutor that same day, so everyone can start with Step 8, independent study, on time.

## 5.2.5 Group member

As a member of a PBL group, you communicate, verbally and non-verbally with fellow members, by exchanging ideas, thoughts, opinions and feelings. This involves the following aspects:

### **Giving information**

At the kick-off meeting you actively tell your fellow students what you already know; you supplement information given by fellow students and explain things that are not clear. You can do this by:

- Organising your thoughts in advance
- Making sure you link your information logically to what has already been said
- Responding to the verbal and non-verbal reactions of fellow students
- Giving others the opportunity to respond

### **Listening actively**

Actively assessing whether your own knowledge or information given by fellow students is correct or not will ensure you will master the subject matter.

An active listening attitude also has a positive effect on both the process and the group's final result. Here are a few tips:

- Make regular eye contact with group members
- Listen to the speakers first, before thinking of your own input or questions
- Stick to the essence of what has been said
- Show active involvement in both your attitude and non-verbal behaviour

### **Requesting information**

Ask for clarification, additional information or explanation, directly and critically, but in a pleasant way. If something is unclear, keep asking clear and concise questions, one at a time.

### **Giving feedback**

Factors that boost and impede the meeting must be put up for discussion. These may involve the content, the method used or the way the group or group members are functioning. When receiving feedback, group members are given the opportunity to adjust any aspects of their behaviour that are impeding the process. Be careful:

- Take into account the feelings of the person you are giving the feedback to

- Give constructive feedback:
  - Based on your own perception and feelings, using the first person (I)
  - Describe both good behaviour as well as potential areas for improvement (Tops and Tips)
  - Stick to concrete examples of behaviour
  - Provide alternatives
  - Check how feedback has been received and understood

### **Asking for and receiving feedback**

The counterpart of giving feedback is receiving feedback. Try to understand the feedback and approach criticism constructively. Avoid rushing to defend yourself, be open to feedback and make sure that you take the information on board:

- If anything is unclear, keep asking questions, including of fellow students
- Check your own interpretation (did you understand the feedback?)
- Check if your own behaviour has a desired effect
- Determine whether you need to change your behaviour and how you could change it

You can also ask for feedback, to help you gain knowledge and insight into your own behaviour and its effect on others. Request targeted feedback and ask specific questions.

### **5.2.6 Tutor**

The meeting takes place under the supervision of a tutor (a lecturer). The tutor's main task is to promote both the students' learning process and their cooperation. What can you expect from the tutor?

## **Encouraging**

The focus of the tutor's interventions lies in ensuring students work on their tasks with sufficient depth and adopt an 'active listening' approach. The tutor does this by:

- Asking open questions
- Reacting if the group accepts factual inaccuracies at face value

## **Asking open questions (by the tutor)**

By asking open questions the tutor steers the course of the meetings. This influences the relevance, depth and applicability of the study materials. The questions can help students identify and resolve misconceptions, incorrect opinions and approaches themselves. The chairman takes the lead, but the tutor may direct and steer the group, if necessary, to meet the targets of the PBL task (especially with respect to depth). Intervention may be necessary in case of:

- The discussion being too broad in a kick-off or case closure meeting
- Gaps in the knowledge
- Stagnation in the input or interaction
- Incorrect ideas or the wrong distinction between primary and secondary issues
- Lack of structure from the chairman or group members

## **When to intervene?**

The tutor tries to intervene at the right time. If he responds too soon, students may think they don't need to listen carefully to each other, because 'the tutor will intervene anyway'. It is of course also not helpful for a tutor to wait until the end of the meeting to tell the group they have been on the wrong track!

## **Providing information**

If the group is not making sufficient progress, the tutor may provide a brief explanation or give practical examples, or illustrate an issue by mentioning similar situations. This may help the group progress, or stimulate them to discuss issues in more depth. The tutor may also make suggestions regarding literature and other resources.

## **Responding to minutes**

The tutor will read the minutes as soon as possible. If they contain major mistakes, or if important things that were said are missing, he will reply immediately. This is also the case if, on consideration, a sub issue is unclear or has been badly worded.

## **Evaluation and giving feedback**

After completion of a PBL task, the group reviews the factors that have boosted or impeded the process. This evaluation may cover both the content and the meetings process. If necessary, agreements can be made, or changed, to improve the cooperation and learning process. This may also involve aligning individual and group interests.

It is extremely important that the tutor informs students of the positive and negative aspects of the process by:

- Indicating if the content of the meetings has been of a sufficient level
- Giving feedback regarding individual performance
- Identifying agreements, procedures and behaviour that went well
- Identifying agreements, procedures and behaviour that could be improved
- Giving his or her opinion on how the different group members have worked together

## **Checking reports**

Although you make your own reports of the tasks, we will coach you in how to write a summary and give your reports sufficient depth and content. This will ensure you know what is expected of you and are well-prepared for the final exams. The source acknowledgements will be rechecked until they meet the required standards. The tutor may read a number of reports in detail at any time and provide feedback during the PBL meeting.

## Appendix 1 Model minutes

<b>Task:</b>	<b>Chairman:</b>
<b>Tutor:</b>	<b>Secretary:</b>
<b>Group:</b>	<b>Board writer:</b>
<b>Date:</b>	<b>Absent:</b>
<b>Room:</b>	<b>Other people present:</b>
<b>Time:</b>	

### **Step 2 Difficult terminology and concepts**

... (including definition)

### **Step 3 Main issue**

### **Step 4 Problem analysis/ brainstorm**

... This does not need to be a full analysis, because most of it will be covered again in Step 4. You can also combine Steps 4 and 5. You could insert a photo of the mind map with some explanation here.

### **Step 5 Systematic documentation of problem analyses**

### **Step 6 Sub issues**

1. ...
2. ...
3. ...

### **Step 7 Independent study tips (sources and deliverables)**

Describe here any useful sources and what is expected for the next meeting. Will there be a role play? Do flipcharts need to be made? What will the tutor be looking for? Etc.

# Appendix 2 Mind map

‘Mind mapping’ is a method for schematically displaying concepts and related ideas around a central concept. A mind map (Figure 1) is used to support creative processes. It gives an overview, helps with concept formation, and learning and memorising the material.

## Method

First think of the central theme (core concept). Write this in the centre of the board. The group should then state any related issues. The board writer records these points and links them to the core concept. Sub topics can be linked to the different subjects in the same way, and so on. To maintain an overview all the topics, including sub topics need to be indicated by means of keywords, abbreviations or drawings, and not by using extensive text.

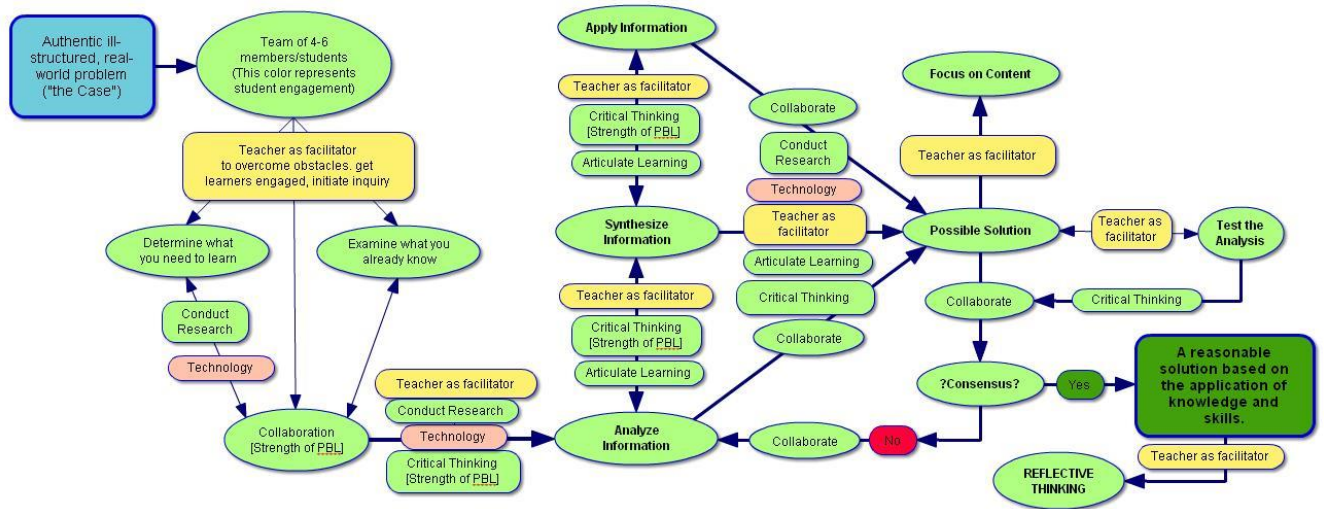


Figure 1: an example of a mind map

## Appendix 3 Studying effectively

This appendix is not only about PBL, but gives you some general guidelines to help you learn how to study. Applying the tips below, you will get more out of your course.

### Orientation

Before you start really studying the subject matter, it is wise to first familiarise yourself with the material. Preparing yourself will make studying more enjoyable, give you a greater return on what you read and help you process the material better. This is really worth spending time on.

One way to prepare is by asking yourself some questions like:

- What is the title of the book?
- What do the terms in the title tell me?
- Have I ever had to deal with this subject before? (For example, in other modules)
- Who is the author? Have I ever read a book by him/her before?
- How is the book structured, and what can I conclude from this?

Pay attention to the summaries, the preface, table of contents and the text on the back cover. Once you have familiarised yourself with these, you will know roughly what is in the book. It is particularly important to you ask yourself questions about the book, and also later, as you're studying the subject material. Make sure you get answers to any questions you don't know the answer to yourself!

### Draw up a plan

Before you actually start, ask yourself how you are going to read the book/ lecture notes. This depends on the requirements of the exams or tests (see module books). Do you need to know the subject matter in detail or do you need to know about it in broad outlines? Some sections may be more important than others. Ask yourself why some things are more important than others.

Depending on the importance of a section of the subject matter and your own prior knowledge, it is sometimes sufficient to only read the text globally. For example, if you do not need to do a chapter for the exam, but you want to keep track of the thread of the book. If you adopt this approach make sure you take note of the graphs, tables and other illustrations. Conclusions, summaries and italicised sections may also help you to get a general view of the book.



## Activating knowledge

When you really start studying the subject material, it is important that you do this as efficiently as possible. You can do this by first activating your prior knowledge on this particular subject. This involves asking yourself if the context of this text is the same as previous texts you have studied, for example:

- What is this text about?
- What is the relationship between this text and the previous chapters?
- Why is this the case, and where is this leading to?
- What do I already know about this?
- To what extent does this correspond to what I still need to learn in this text?

Another possibility is that you write down what you already know about the new subject.

## Reading

Start by carefully reading everything. To get a clear picture of what the subject matter is about, it is important that you make notes while reading. Limit yourself, however, to the main ideas, definitions, important numbers, etc. Important key points in a text are often preceded by words like: 'first', 'finally', 'so', 'particularly', etc. These words may help you clarify the subject matter, as will making a diagram.

Some tips to structure your work:

- Divide the subject matter into smaller units; this is a lot more efficient
- Don't do two similar modules in succession, such as two languages
- Alternate subjects you have to study with other work you need to do
- Look at the subject matter you really need to study when you are still fit and fresh, this is often in the morning
- Do the module you find most boring first, to get it out of the way
- Take regular breaks. This increases the effect of your studying, and you will have something to look forward to. One option is to take a five-minute break after studying for half an hour, and do something else. This is different for everyone. Find out what works best for you.

## Checking

It is extremely important that you check whether you have understood everything. You can do this by using your own words to describe what the subject matter is about. If things are unclear, read the text again and ask your fellow students or your tutor specific questions.

## **Repetition**

To make the things you have studied stick, you need to go over the subject matter more than once. You can do this by using your notes or summaries.

## **Exams/tests**

When preparing for your exams, it is clearly important to know what you will be up against: What do you need to know, and how do you need to know the subject matter. This will become clear after studying the material. It is therefore important to do so in time. Another even better way of finding out what is expected of you is looking at old exams/tests (these can be found in the module books or on Blackboard) and asking students from higher years about what they thought of the module. If you know what is expected of you and have studied the subject matter, you can start checking if you have processed it all. This is very important, because reading and rereading the subject matter is often not enough. There are different methods, depending on the type of examination, for example:

- For an oral test, you can make oral summaries in front of a fellow student, or speak into a tape recorder and play it back later
- For an exam/test with open questions, you can test yourself by writing summaries
- For a multiple choice exam/test, you can think of questions about the subject matter yourself. You can also do this with a fellow student and ask the questions to each other.

Attend the question and answer session that is held for various modules. It is important that you prepare for this by thinking of questions in advance!

Regardless of your final mark, it is important to evaluate your own results. This can be done by reviewing your exam and talking to your tutor about it. You can learn from good results, because you have apparently handled the subject well, so use that approach more often. In the case of poor results, you can ask yourself why the result was so disappointing, and use a different approach next time.

## **Finally**

If you feel that you cannot study well, think about what might be the cause. Your mentor might be able to help you and give you a few pointers, do not hesitate to discuss this.

Maybe after a few months of studying, you will ask yourself whether this programme offers what you expected. Having doubts about your study is perfectly normal. If things aren't going well, talk about them. Whatever you do, make sure you talk to fellow students, tutors and your mentor. The mentor hour is also an opportunity to bring up such issues.

Good luck with your course!

## Appendix 4: PBL evaluation form

<b>Naam:</b>	<b>Klas:</b>	
<b>Blok:</b>	<b>Tutor:</b>	
<b>Beoordelingscriteria</b> (voor uitgebreide beschrijving zie PGO Handleiding):		
- Afspraken nakomen	- Feedback geven	- Rol gespreksleider
- Samenvattingen geven	- Feedback ontvangen	
- Actief luisteren	- Evalueren	
- Informatie geven/ vragen	- Rol Bordschrijver	
- Schriftelijke vaardigheden	- Rol Notulist	
<b>Mijn leerdoel(en) op basis van de eindevaluatie en de opmerkingen van mijn tutor van vorig PGO-blok is(zijn):</b>		
<b>Hieronder geef je weer:</b>		
<b>A: groepslid, bordschrijver, notulist of gespreksleider</b>		
<b>B: welke feedback je gekregen hebt</b>		
<b>C: wat je van je eigen functioneren vond</b>		
<b>A: Mijn rol bij taak 1:</b>		
<b>B:</b>		

**C:**

**A: Mijn rol bij taak 2:**

**B:**

**C:**

**A: Mijn rol bij taak 3:**

**B:**

**C:**

**A: Mijn rol bij taak 4:**

**B:**

**C:**

**A: Mijn rol bij taak 5:**

**B:**

**C:**

**A: Mijn rol bij taak 6:**

**B:**

**C:**

**Hieronder geef je aan (gebaseerd op bovenstaande gegevens) wat je goed gedaan hebt bij PGO en wat je verbeterpunten zijn. Geef ook aan wat je van je eigen functioneren vond.**

**Evaluatie:**

<b>Opmerkingen tutor:</b>
<b>Beoordeling: Voldoende/ Onvoldoende</b>