

Lesson 3

How do we catch "as many fish as possible"?

Debriefing and reflection

This matrix sums up the information a teacher needs to plan and deliver the lesson.

Competence training refers directly to EDC/HRE.

The learning objective indicates what students know and understand.

The student task(s), together with the method, form the core element of the learning process.

The materials checklist supports lesson preparation.

The time budget gives a rough guideline for the teacher's time management.

Competence training	Analytical thinking: linking experience to an abstract concept or model.	
Learning objective	Model of sustainability goals.	
Student tasks	The students reflect on their experience in the fishing game.	
Materials and resources	✎ Student handout 4.2. ✎ Student handout 4.3 (optional).	
Method	Debriefing statements. Plenary discussion. Individual work.	
Time budget	1. Debriefing: the students step out of their roles.	15 min
	2. The students explore the ambiguity in the instruction, "Try to catch as many fish as possible".	10 min
	3. The model of sustainability goals.	15 min

Information box

Debriefing: students step out of their roles. Strong feelings may be involved here.

Inductive approach to the model of sustainability goals: students develop goal categories of the sustainability model out of their debriefing statements. Exercise in abstract thinking.

Constructivist learning: students create the context in which they understand and need the sustainability model. Rather than asking the teacher, they ask the questions in reflection time.

Lesson description

Stage 1: Debriefing

The students step out of their roles in the fishing game

The teacher makes notes on the flipchart or blackboard, leaving space for a second column.

The students may be expected to express strong feelings:

- Conflict between winners and losers.
- Rich and poor fishermen.
- Destruction of natural resources.
- Decline of total fishing output (impoverishment of the whole fishing community).
- Difficult negotiations, e.g. lack of responsibility, some partners unwilling to co-operate.
- Difficult to obtain vital information. Guessing added to overfishing.
- No authority to enforce rules.
- No reward for responsible fishing policy – fishing less means poverty, and additional catches for the other fishermen.

Stage 2: Reflection

The students explore the ambiguity in the instruction, "Try to catch as many fish as possible"

The teacher explains that the students have outlined a complicated problem. To overcome such problems, the first step is to understand them. As in medicine, the doctor needs a diagnosis before he/she can decide what kind of therapy to apply.

The teacher reminds the students of the instruction they received before they began the fishing game and writes the phrase on the blackboard or flipchart: "Try to catch as many fish as possible".

The teacher asks the students to recall how they understood this instruction and what their goal was when they defined their fishing quota. They should think about three points:

"Try" – who should try?

"As many as possible" – what is the limit indicated by the word "possible"?

They spend a minute in silence. The teacher then asks for their inputs. The students explain how they understood this instruction, and give their reasons. When a clear picture has emerged, the teacher takes down the key statements on the blackboard (flipchart).

If the students report back that they adopted the perspective of their village, focusing on their interests, if necessary at the expense of others and of the environment, the result would be as in the following table. But perhaps some students include other perspectives, and the result would come closer to the full picture (see second table).

Our goal in the fishing game: "Try to catch as many fish as possible."					
Who?		As many as possible?		When?	
Our boat		Limit set		Today	
		by quota			
Welfare for us		Welfare for us		Welfare for us	

If they have kept to the perspective of increasing their village’s welfare, the result will be striking. The students will see that by their narrow focus on “welfare for us *alone*” they have collectively brought about the catastrophe.

This gives rise to the question whether the students can imagine any alternative, more constructive readings of the goal “catch as many fish as you can”.

On the other hand, if the students also include other goals, such as protection of fish resources or responsibility for the other villages in the lake community, the contrast between the goal definitions becomes immediately apparent.

The students may also check whether the initial instruction should be changed. However, if they agree to the model assumption that fish in the lake are the only protein resource available, they will accept it.

In the end, by whatever path the discussion has taken, the students should have recognised and acknowledged that “catching as many fish as possible” can be defined in different ways, entailing different consequences.

The teacher sums up the students’ inputs and adds them to the board:

Our goal in the fishing game: “Try to catch as many fish as possible.”					
Who?		As many as possible?		When?	
Our boat	All of us	Limit set		Today	In the long run
		by quota	By reproduction rate		
Welfare for us	Welfare for all	Welfare for us	Protection of resources	Welfare for us	Responsibility (environment, future generations)
Conflict	Peace	Conflict	Peace	Conflict	Peace

This picture may prompt the students to raise new questions.

Clearly, the alternatives are much more sensible than insisting on “welfare for us” at the expense of all, as the outcome will be conflict. But why didn’t we, the players, attempt to balance these objectives from the start, and why was it so difficult to agree on these goals in the negotiations?

Stage 3: The model of sustainability goals


Step 3.1: The students link their discussion to the model


The teacher distributes \approx student handout 4.2 (Model of sustainability goals). The students are given the task of identifying the goal in the model that they have just discussed (“welfare for us” – “welfare for all” – “protection of the environment” – “responsibility for future generations”).

The students respond after a brief period of silent study. They will identify the goals in the triangle on the handout, and, depending on their preceding discussion, further goals.

The teacher refers to the explanatory notes (the meaning of the double pointed arrows, dimensions of the goals: sustainability goals, time dimension, global dimension).

Step 3.2: Setting the homework task: the students prepare an input for the following lesson


The teacher sets the students a piece of homework. They are to prepare an input, to be delivered at the beginning of the following lesson. They receive the following instructions as a mini-handout (see  materials for teachers 4.5).

1. Explain why it is difficult to achieve two or more sustainability goals at the same time. Refer to  student handout 4.2 and our discussion in class.

2. Explain why most players stick to the goal of individual welfare, even when the disastrous consequences have become clear.

If you wish, you can also refer to concrete examples.

Have your statements ready in writing.

The teacher has the option of supplying  student handout 4.3 to support the students if necessary.