

ELEVATING KNOWLEDGE METHODOLOGY

1 → 2 → 3

Step	Explanation	Level
1 Informational base	Establish and solidify an informational base.	1
2 Prior knowledge	Identify the cornerstones for the knowledge. Knowledge is built upon a foundation of prior knowledge.	2
3 Inquiry questions	Identify the key inquiry questions for comprehension and key issues for constructing the knowledge.	2
4 Test conditions	With the framework in place, test the conditions of the structure; use critical thinking to explore the assumptions or logic of the knowledge model.	2
5 Familiar context	Transfer and apply the knowledge to a familiar context to enrich understanding.	low 3
6 Similar context	Transfer and apply the knowledge to another context that is similar.	low 3
7 Distant context	Transfer and apply the knowledge to a context that is some distance from the original context.	3
8 Unfamiliar context	Transfer and apply the knowledge in a totally unfamiliar context with the teacher acting as consultant.	3
9 Generalize	Independently make a generalization of the new knowledge.	4

Simple Example of the Methodology—Change Car Oil

Step 1 Establish and solidify an informational base.

Identify the tools required to change the oil find three possible facilities at which to change the oil; know how to add and measure engine oil; know the type of oil filter required, etc.

Step 2 Identify the cornerstones for the knowledge.

Determine the student's prior knowledge about the need for lubricants in any type of machine, the basics of engine oil systems, and the purpose of the filter.

Step 3 Identify the key inquiry questions for comprehension.

What are the reasons for the order of the steps involved in changing oil? What would happen if a particular step were left out of the process? What happens to the old oil?

Step 4 With the framework in place, test the conditions of the structure.

What would happen if there were less oil than recommended? More oil?

Step 5 Find a context you are familiar with and transfer and apply the knowledge to that context.

Demonstrate or explain in detail how to change the oil in your own car.

Step 6 Transfer and apply the knowledge to another context that is similar.

Demonstrate or explain in detail how to change the oil in a pickup truck.

Step 7 Make a transfer, and apply the knowledge to a context that is some distance from the original context.

Demonstrate or explain in detail how to change the oil in a riding lawn mower.

**Step 8 Pick a totally unfamiliar context, and transfer and apply the knowledge with teacher as consultant.**

Explain why there is no need to change the oil in a chain saw engine.

Step 9 Generalize the new knowledge.

Discuss possible means to provide lubrication in a wide range of machines from air-conditioner units to turbo-jet engines.

Knowledge Forms

Knowledge forms include the following:

Concept—an idea that represents a set of relationships.

Process—a sequence of activities.

Tool—an instrument to accomplish a task.

Context—conditions relevant to performance.

Way of Being—a set of attitudes, actions, or values.

Table 1 illustrates levels of knowledge from Level 0.5 to Level 4 based upon each of the knowledge forms.

The Most Difficult Steps in the Method

1. The Pre-learning phase (Steps 1-5 in the LPM)

The learner and the teacher must agree why the learning objective is important, gain mutual orientation to the learning issues and context, and activate relevant prerequisite knowledge.

2. Achievement of Level 2

Comprehension of the principles, theories, and models that have developed in an area of knowledge facilitates and enhances successful application. However, learners vary in their need for exposure to simple application opportunities as a way to clarify their Level 2 understanding and to motivate deepening of their understanding.

3. Generalization of the knowledge to higher Level 3

Extensive experience with using knowledge in varied contexts is the basis for increasingly sophisticated internalization of both theoretical knowledge and problem-solving expertise.