

## The Relation Between Bloom's Taxonomy and PUDAL Cycle

I often model smart systems to have a PUDAL cycle: [P]erception of Stimuli, [U]nderstanding, [D]ecision making or Designing Plan of Action, [A]ction or Plan Executing, and [L]earning or Evaluation. What is the most logical relation between Bloom Taxonomy and PUDAL cycle?

The most logical relation between your **PUDAL** cycle and **Bloom's Taxonomy** is that **PUDAL** represents the *Process Flow (Time)*, while **Bloom's** represents the *Processing Depth (Complexity)*.

You can visualize this as a matrix: PUDAL is the horizontal axis (steps you take), and Bloom's is the vertical axis (how deeply you think at each step).

Here is the direct mapping of where each stage of your Smart System (PUDAL) intersects with the cognitive hierarchy of Bloom's Taxonomy.

### 1. The Direct Phase Mapping

**[P] Perception of Stimuli → Bloom Level: Remembering \* The Logic:** Perception is the retrieval or recognition of data. In a smart system, this is "sensing." In Bloom's terms, this is the lowest level of cognition: recognizing that a specific fact or stimulus exists. \* *Bloom Action:* Recognizing, Listing, Describing (the raw input).

**[U] Understanding → Bloom Level: Understanding \* The Logic:** This is a 1:1 match. The system (or person) acts on the perceived data to determine context. It translates raw signals into meaning. \* *Bloom Action:* Interpreting, Classifying, Summarizing (the context).

**[D] Decision/Design → Bloom Level: Analyzing & Creating \* The Logic:** This is the most cognitively demanding phase. \* **Decision** requires **Analyzing**: Breaking down the situation to look for patterns or causes. \* **Design** requires **Creating**: Synthesizing those parts to formulate a new plan or strategy. \* *Bloom Action:* Differentiating (options), Organizing (logic), Planning (the output).

**[A] Acting → Bloom Level: Applying \* The Logic:** You are executing the plan designed in the previous step. In Bloom's, "Applying" is defined as using a procedure in a given situation. \* *Bloom Action:* Executing, Implementing, Using (the plan).

**[L] Learning/Evaluating → Bloom Level: Evaluating \* The Logic:** The system looks at the result of the Action vs. the intent of the Design. It judges the quality of the outcome to update the model. \* *Bloom Action:* Checking, Critiquing, Judging (the delta between expected and actual).

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### 2. The Integrated Model (The "Smart Loop")

To map this logically, you should view the relationship as a **Control Loop** where Bloom's Taxonomy dictates the "intelligence" of the PUDAL cycle.

There are two ways to view this relationship:

### **A. The “Reflexive” PUDAL (Low-Level Bloom)**

If the system is simple (automation), the PUDAL cycle stays at the bottom of Bloom’s: \* **P**: Detects heat (Remember). \* **U**: Interprets as “Too Hot” (Understand). \* **D**: Selects pre-set rule “Turn on Fan” (Basic Application/Selection). \* **A**: Turns on Fan (Apply). \* **L**: Checks if temp dropped (Basic Evaluation).

### **B. The “Cognitive” PUDAL (High-Level Bloom)**

If the system is smart (AI/Human Expert), the PUDAL cycle reaches the top of Bloom’s: \* **P**: Detects market anomaly (Remember). \* **U**: Interprets as a new emerging trend (Understand). \* **D**: **Synthesizes** a new investment strategy to exploit the trend (**Create/Design**). \* **A**: Executes the trade (**Apply**). \* **L**: **Critiques** the strategy’s validity against global variables to update its mental model (**Evaluate**).

## **3. Visualizing the Relation as a Map**

If you were to draw a knowledge map of this relationship, it would look like a **Spiral**.

1. **The Axis:** The vertical pole is Bloom’s Taxonomy (Depth).
2. **The Cycle:** PUDAL is a circle winding around the pole.
3. **The Movement:**
  - As you move from **P** to **U**, you climb slightly.
  - At **D**, you spike up to the highest levels (Creating/Analyzing).
  - At **A**, you drop down to practical ground level (Applying).
  - At **L**, you climb back up to judge the whole process (Evaluating).

**Summary for your Model:** The [**D**] and [**L**] phases correspond to the “Higher Order Thinking Skills” (HOTS) in Bloom’s Taxonomy, while [**P**], [**U**], and [**A**] correspond to “Lower Order Thinking Skills” (LOTS). A truly “Smart” system is defined by how robust its **D** (Design/Create) and **L** (Evaluate) phases are.