**Applied Learning through Threshold Concepts**

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**Threshold Concept**: Distributed Generation Vs Centralized Generation

**Transformative:** Changes the learner’s view from centralized to decentralized energy models.  
**Troublesome:** Challenges conventional thinking about grid stability, reliability, and energy policy.  
**Integrative:** Brings together concepts from electrical engineering, environmental science, and policy.

**Already Known to the students**:

Renewable Generation and Centralized Generation

**Yet to be known by the students:**

Distributed Generation, Environmental impacts of present generation technologies.

**Comparison of Case Studies:**

|  |  |  |
| --- | --- | --- |
| **Fink’s Taxonomy** | **Bloom’s Taxonomy** | **SOLO Taxonomy** |
| **Foundational Knowledge(Background)** | **Background** | **Background** |
| **Application (Scenario)** | **Remembering** | **Pre-structural *(No or minimal understanding)*** |
| **Integration (What you observe)** | **Understanding** | **Uni-structural *(One aspect understood)*** |
| **Caring (Why it matters)** | **Applying** | **Multi-structural *(Several aspects known but not connected)*** |
| **Human Dimension (You reflect)** | **Analyzing** | **Relational *(Links between aspects are understood)*** |
| **Learning how to learn (Your task)** | **Evaluating** | **Extended Abstract *(Generalizing, predicting, or creating new ideas)*** |
|  | **Creating** |  |

**Reflective questions based on the Bloom’s Taxonomy for the case study:**

### **1. Understanding (Level 2 – Comprehension)**

**How does the distance between the power source and users affect the efficiency and reliability of electricity supply in Pineville?**

### **2. Analyzing (Level 4 – Analysis)**

**Compare the environmental and social impacts of the existing coal-based power supply with the proposed local solar solution for Pineville. What are the key differences and why do they matter?**

### **3. Evaluating (Level 5 – Evaluation)**

**If you were a Pineville resident, would you support switching to a local solar power system? Justify your answer with reasons related to cost, environment, and daily life.**