



Interactive Design Concepts for “Internet Service Types”

1. Internet Service Type Matching Simulator

Objective: Help learners match internet technologies to real-world user needs and geographical constraints.

Description:

An interactive drag-and-drop game where students:

- They are presented with **real-life scenarios** (urban office, rural cabin, traveling field researcher, etc.).
- Must drag and match the correct **internet service type** (Fiber, DSL, Satellite, RF, Cable, Cellular) to each case.
- Receive immediate feedback and explanations.

Key Features:

- Built-in “**Why it works**” **popups** tied to each answer.
- Toggle switch for “Challenge Mode” (removes hints).
- Audio narration for accessibility.

Learning Outcomes:

- Reinforce **conceptual differentiation** between service types.
 - Apply knowledge to **geographical and practical constraints**.
 - Reflect the **Postman ideal**: learning tied to meaningful real-world scenarios.
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2. Throughput Visualizer & Speed Comparison Tool

Objective: Allow students to visualize bandwidth differences among service types (e.g., 10 Mbps DSL vs. 1 Gbps Fiber).

Description:

A **speed comparison dashboard** where students:



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- Select a file type (e.g., video, document, dataset).
- Choose an internet service type.
- See **animated data transfer progress bars** for each.
- Compare latency and transfer completion time in real time.

Key Features:

- Interactive sliders: change file size, distance, or congestion.
- Real-world delay simulation for satellite (e.g., 600 ms latency).
- Use-case examples embedded: “Can this connection stream 4K smoothly?”

Learning Outcomes:

- Grasp the **implications of throughput, latency, and speed**.
- Relate abstract metrics (Mbps, Gbps) to concrete user experience.
- Illustrate **McLuhan’s “the medium is the message”**—the form of connectivity shapes the form of communication.

3. Build-A-Network: ISP Planning Challenge

Objective: Apply student knowledge in designing an appropriate internet setup for varied locations.

Description:

A **scenario-based planning game** where students:

- Take the role of an IT consultant helping 5–6 locations set up internet connections.
- Each case includes:
 - Budget limits
 - Bandwidth requirements
 - Location/geography
 - User volume (e.g., 1 vs. 100 people)

Students choose among available services (Fiber, Cable, DSL, RF, Cellular, Satellite) and justify their decisions.

Key Features:

- Budget-performance analysis chart.
- Tooltip-based glossary for each connection type.



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- Peer voting or group collaboration mode.

Learning Outcomes:

- Practice **systems thinking and tradeoff analysis**.
- Develop **strategic IT planning skills**.
- Integrate **cyberinfrastructure awareness** into technology decision-making (reflects Negroponte's vision of digital literacy as infrastructure understanding).

Summary Table

Tool	Key Focus	Learning Outcome
Matching Simulator	Practical scenarios	Service-type recognition, scenario-appropriate decision
Throughput Visualizer	Speed, latency, real-time impact	Conceptual-to-experiential understanding of performance
ISP Planning Challenge	Strategic choice + budget	Real-world application, IT consultation skills