Wicked vs. Simple Problems: Implications for Education Policy

A Presentation to the Education Committee
of the Vermont House of Representatives

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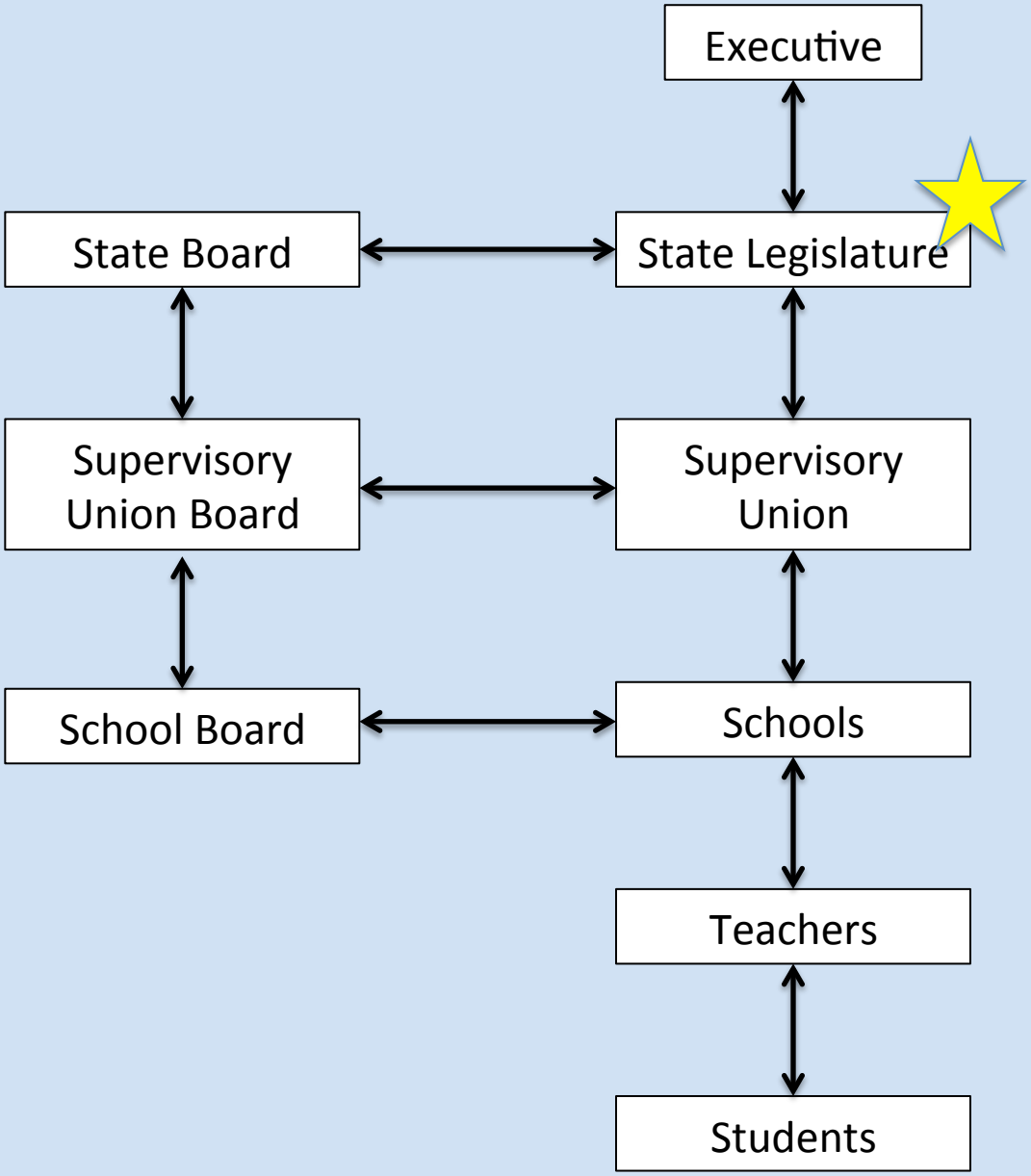
Three Key Points

1. Education is a complex system.

2. Simple vs. Wicked Problems

3. Leverage within the system vs. discrete policies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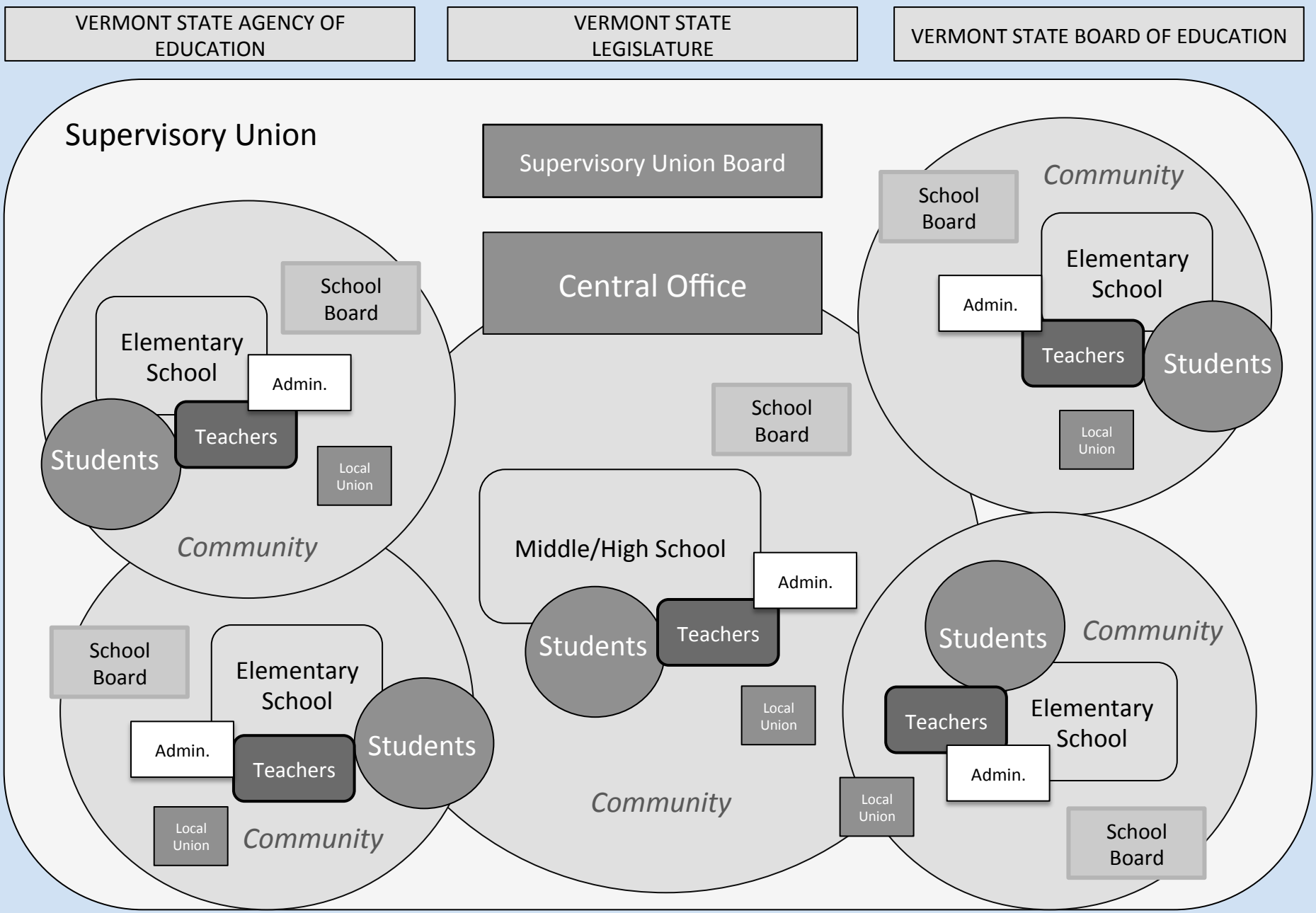
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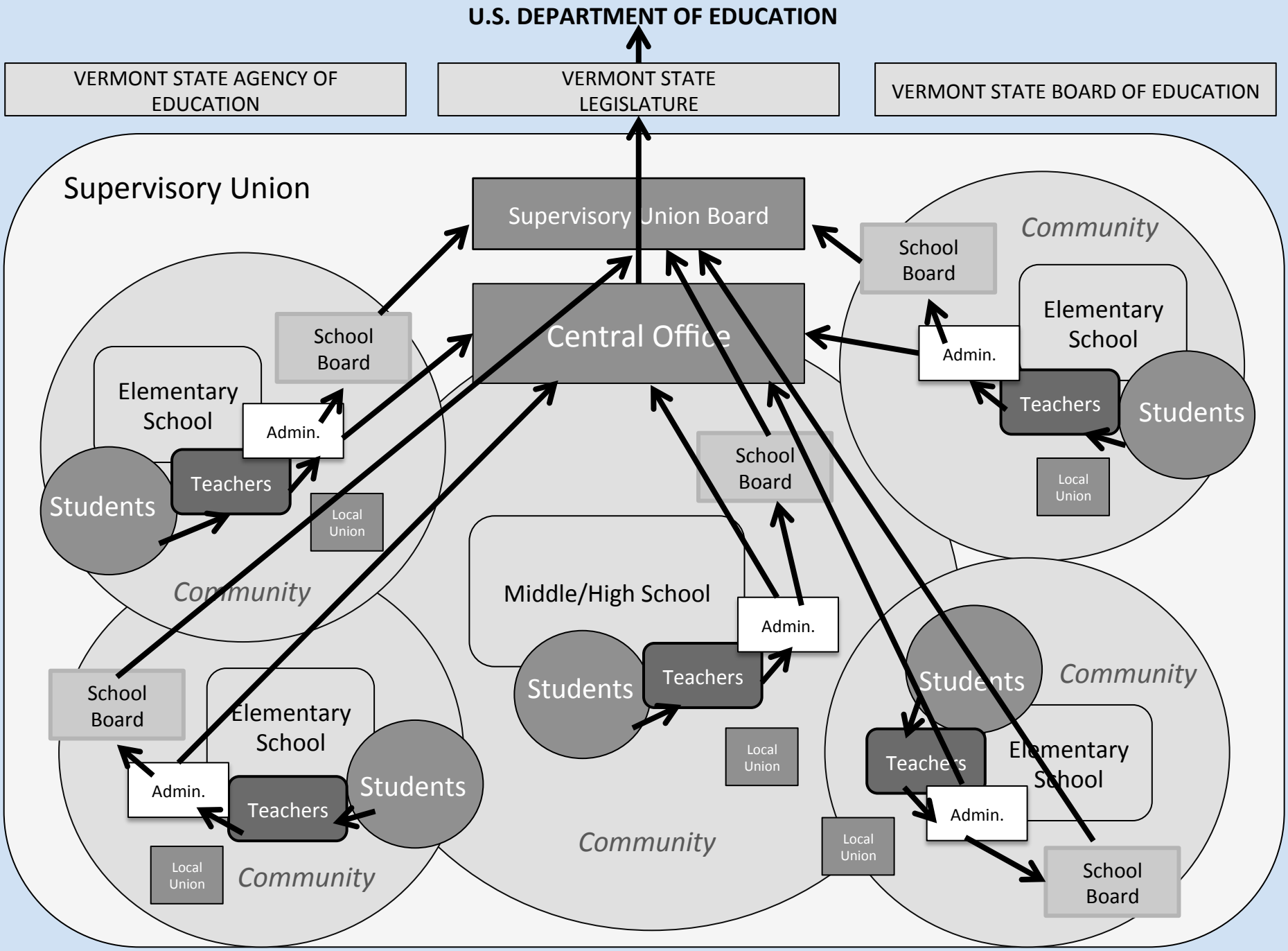
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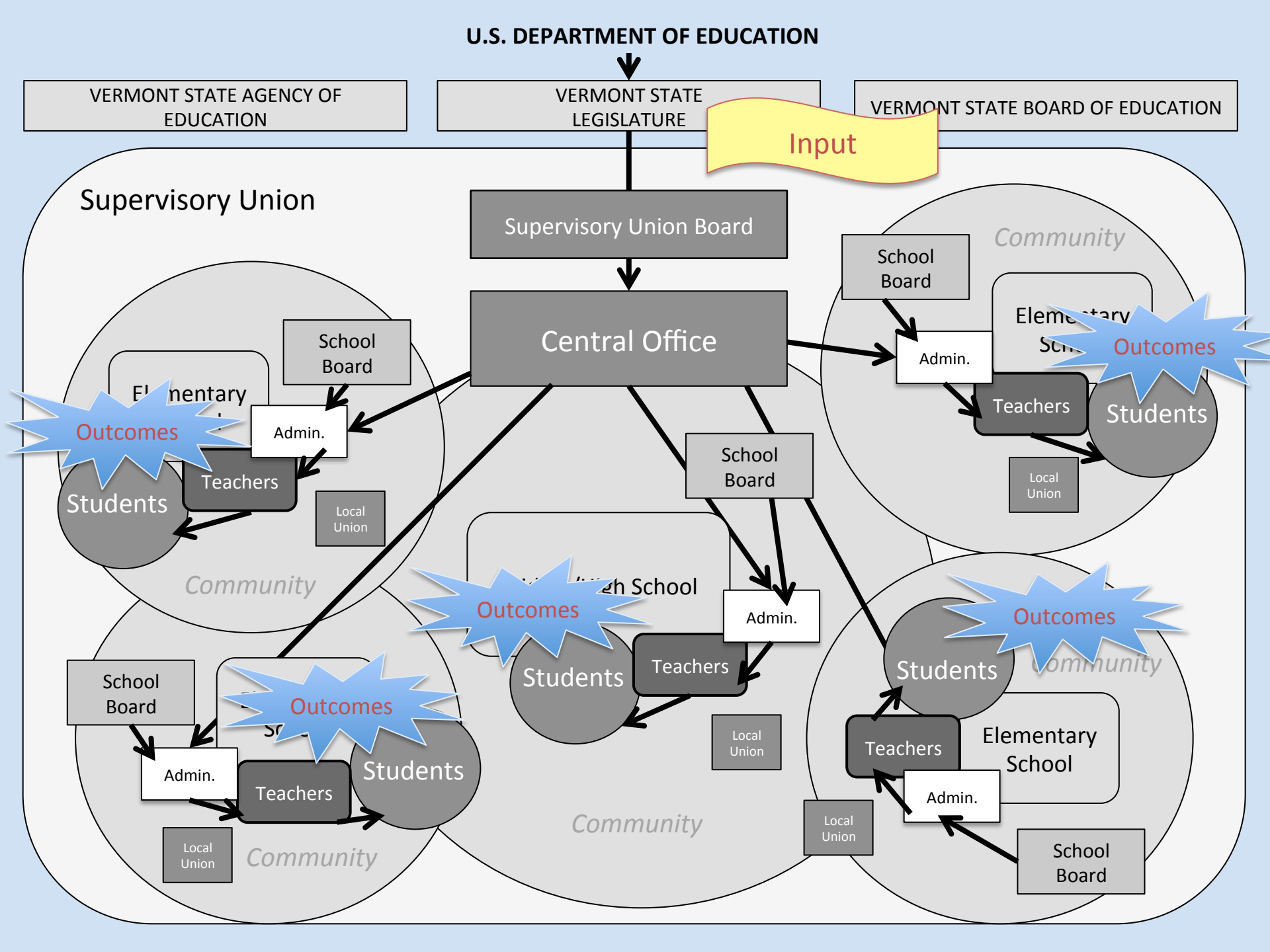
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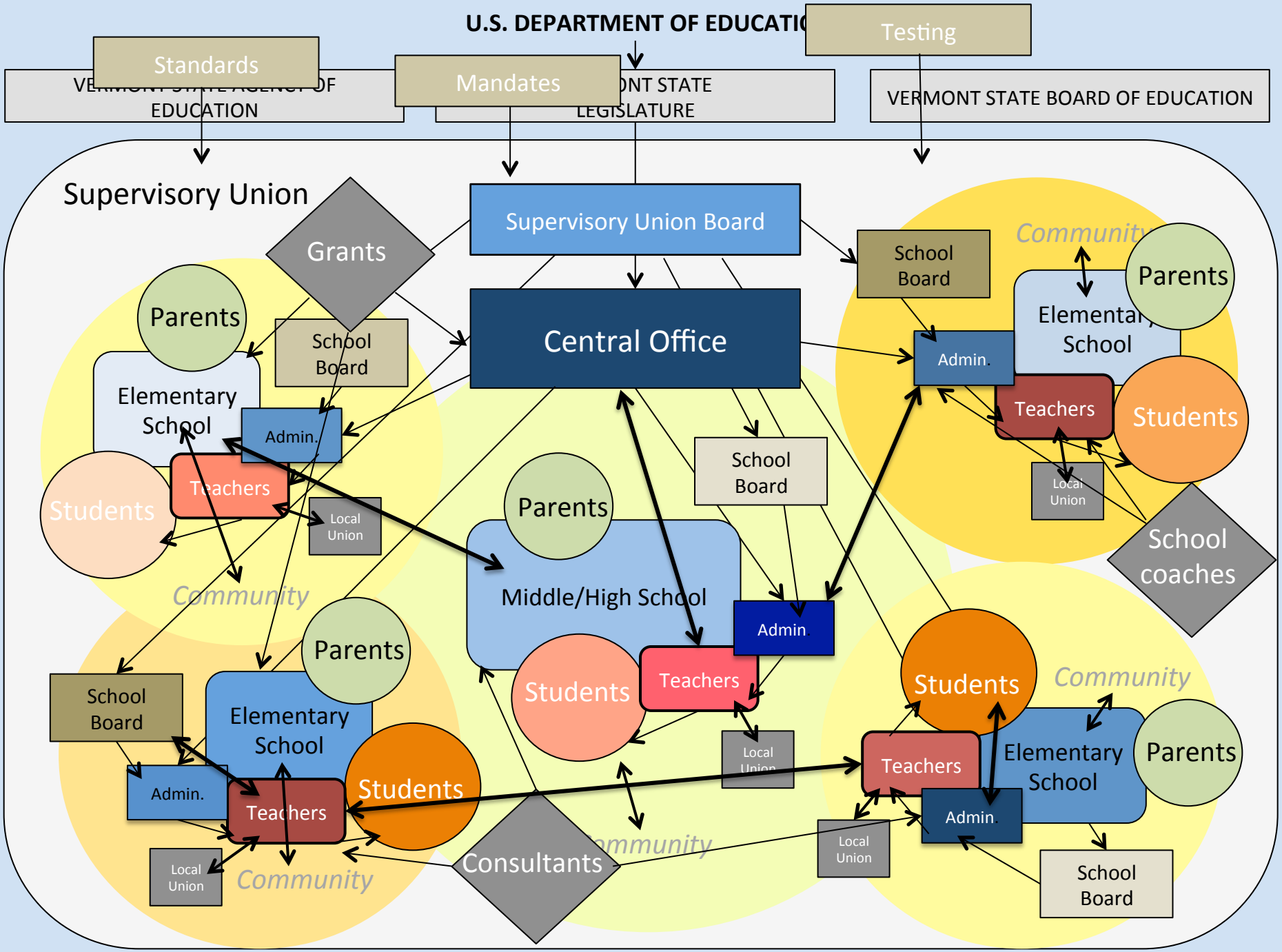
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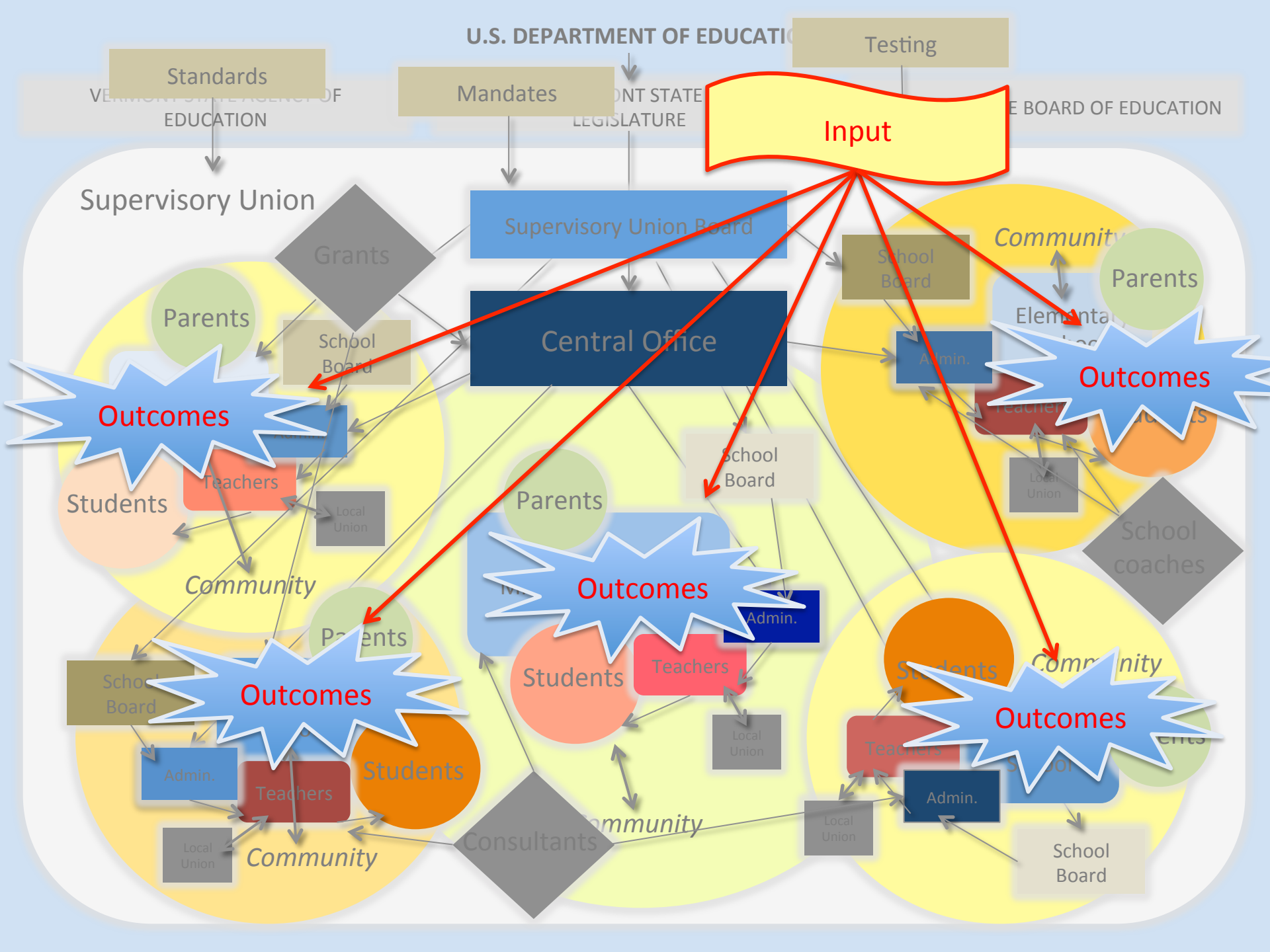
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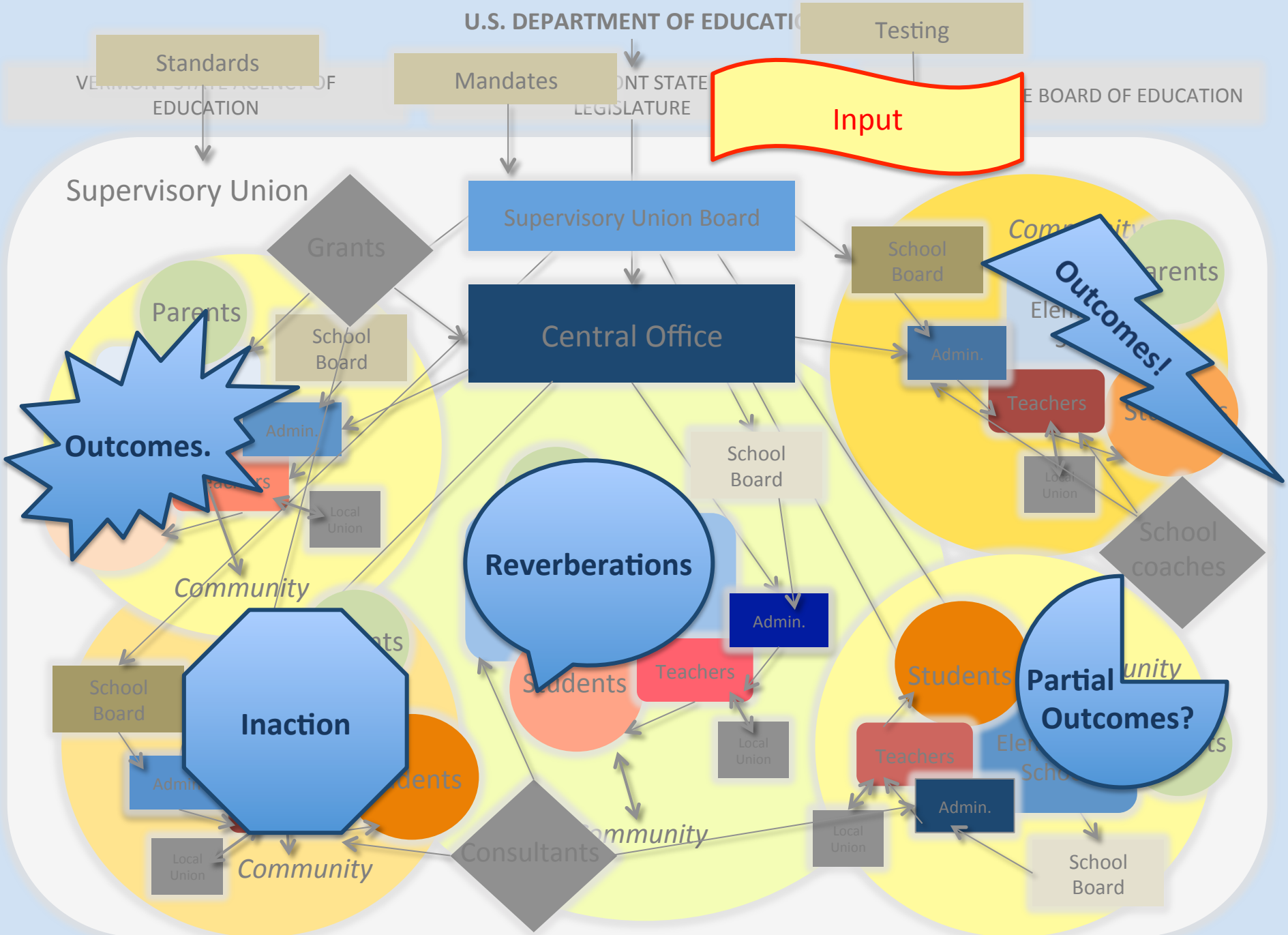
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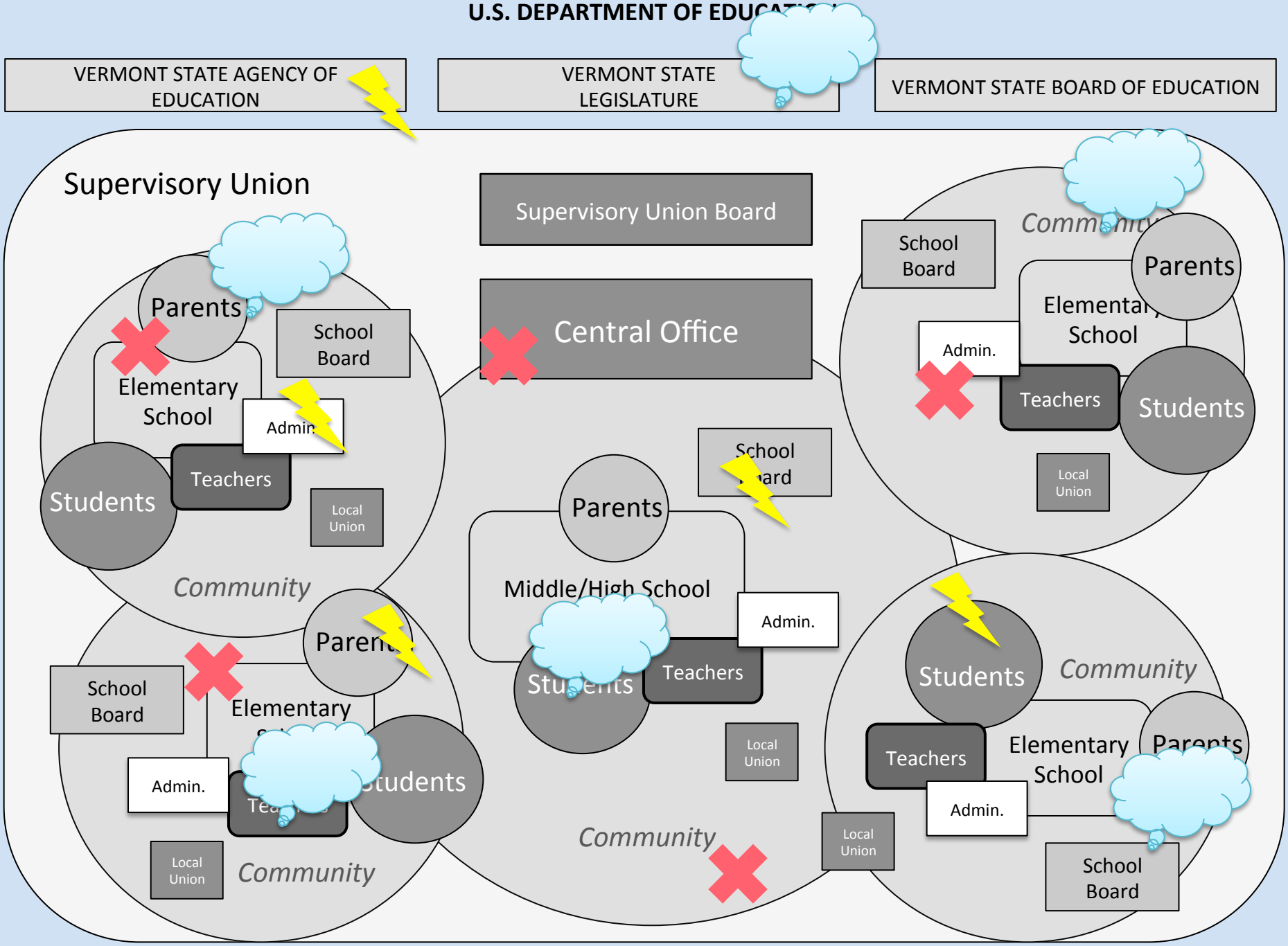
School coaches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Key Characteristics of a Complex Education System

- Interdependent problems
- Priorities, interests, and needs differ across the system
- Multiple sources of decision and policy-making power

Simple vs. Wicked

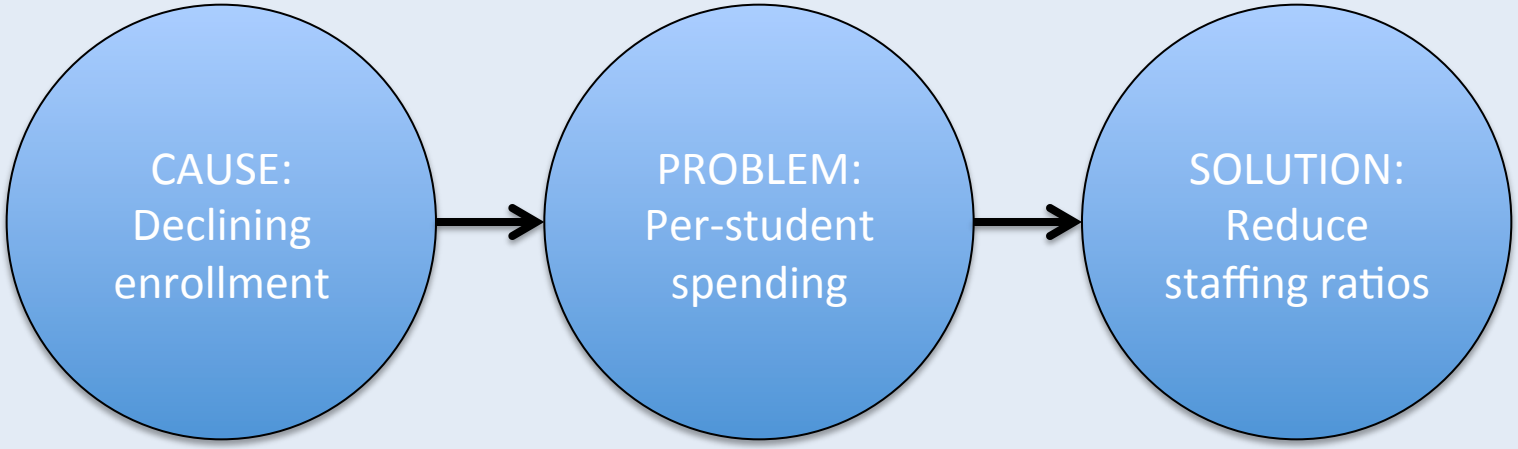
Wicked Problems

(1) Multiple smaller, interrelated problems

(2) Simple solutions to one problem impact other problems

(3) Disagreement among stakeholders

Simple Problem



School Funding as a "Wicked Problem"

Many Interrelated "Problems" Throughout System:

Examples …

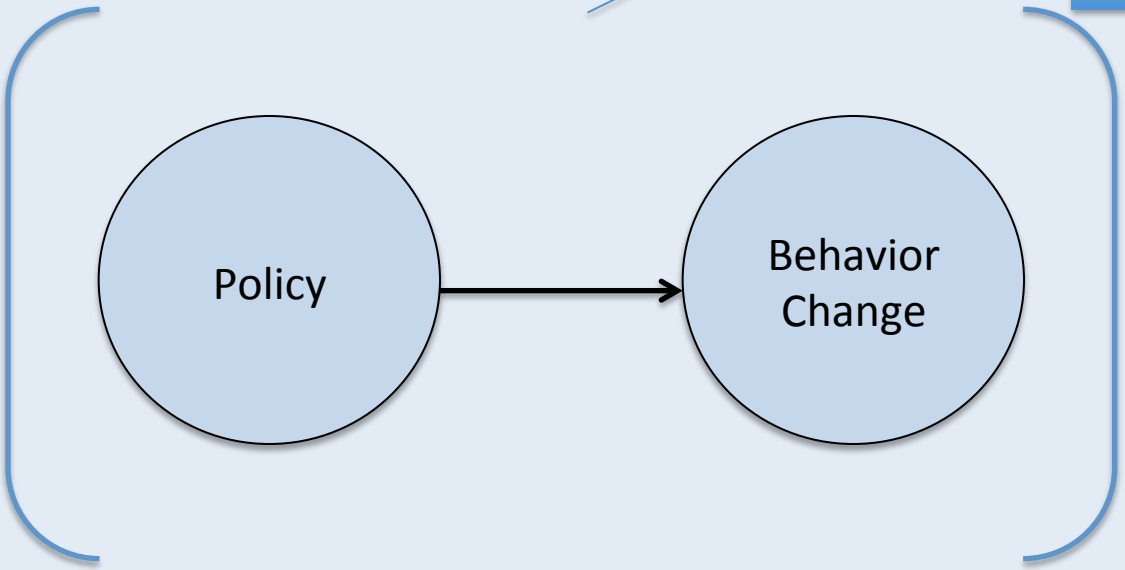
- Large per pupil spending differences among districts/schools
- Potential inefficiencies resulting from a large number of schools and districts
- Declining student population
- Local control over school budgets
- High property taxes
- Differences in resources among schools
- Achievement gaps
- Student and family poverty
- Comparatively low transition rate to post-secondary education
- School staffing ratios
- Escalating special education costs
- And … more …

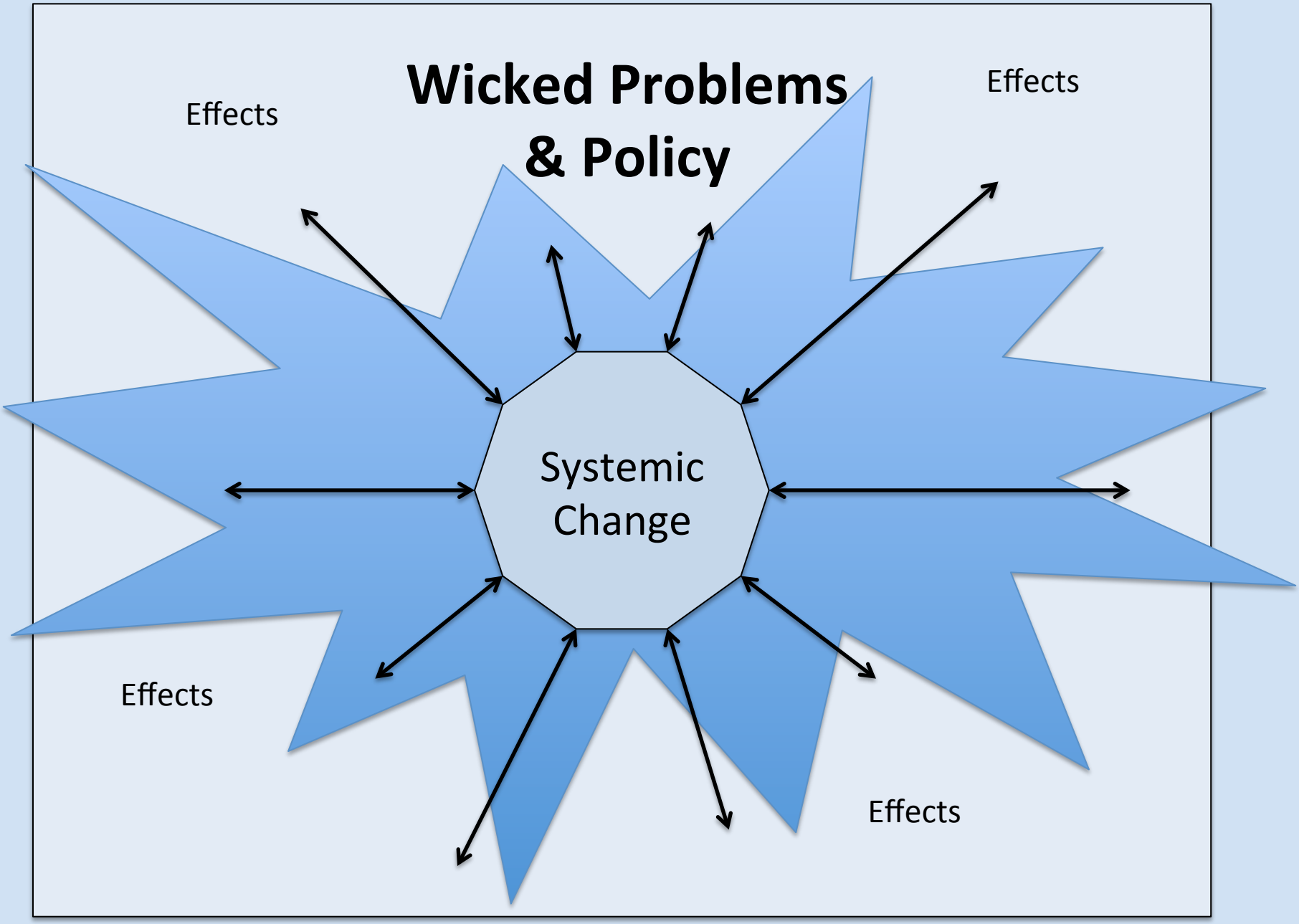
Implications for Policymaking

- Simple Problems
  - Discrete policies targeted at one problem
  - *Key assumption:*
    - Policy does/will not impact other parts of the system, or interact with other problems in the system
- Wicked Problems
  - Policies focused on systemic changes
  - *Key assumption:*
    - Policy will (and should) impact multiple parts and interact with multiple parts of the system

Simple Problems & Policy

Self-contained problem within the system




Wicked Problems & Policy
Effects
Effects
Systemic Change
Effects
Effects

Systemic Policymaking

- Policymakers need to look for points of **leverage** within the system

- **Leverage asks about where we can intervene in the system, make small changes to create big differences**

Leverage Points

Least effective

12. Constants, parameters, numbers (such as subsidies, taxes, standards)

11. The sizes of buffers and other stabilizing stocks

10. The structure of material stocks and flows (such as transport networks, population structures)

9. The length of delays, relative to the rate of system change

8. The strength of negative feedback loops

7. The gain around driving positive feedback loops

6. The structure of information flows

5. The rules of the system (such as incentives, punishments, constraints)

4. The power to add, change, evolve, or self-organize system structure

3. The goals of the system

2. The mindset or paradigm out of which the system arises

Most effective

1. The power to transcend paradigms

Source: Meadows (1999) “Leverage Points: Places to Intervene in a System”

Example: Leverage Points & State SPED Funding Policies

Point of Leverage	Example
12. Constants, parameters, numbers (such as subsidies, taxes, standards)	Weighted student funding formula
5. The rules of the system (such as incentives, punishments, constraints)	Census-based funding formula

How does one operationalize a systems approach to change?

- Tips from Snyder (2013), p. 28-29

- Foster a collaborative environment across organizations.
- Create opportunities for continuous interaction and collaboration between players from different subsystems.
- In rolling out ideas, encourage experimentation at the local level and solicit feedback to inform an iterative process.
- Open opportunities for institution-wide learning, which can grow outward from local areas.
- Engage teachers in collaboration, research, and peer-to-peer mentoring.
- Increase interactions with less obvious partners. Effective solutions may come through partnerships with non-educational institutions.
- Don't try to solve everything. Address the most pressing issues collaboratively and vigorously.

Wrap Up

What I hope we accomplished today:

- Envisioning Vermont's education system as a "complex system"
- Distinguishing between "simple" and "wicked" policy problems
- Identifying points of "leverage" in complex systems as policy making strategy

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