Model Thinking Notes

Author: Scott E. Page
Notes by Daniel Crean

Models are formal structures in math and diagrams.

They can improve the ability to reason, explain, design, corroborate, act, predict, and explain.

Many-model thinking - helps us to explain complex phenomena.

Models make us smarter.

Aristotle: value of courting - excellence of meaning.

Simple model approaches not sufficient, although still what academics use.

Models use math, not words. They simplify and make precise.

All models wrong because they simplify

To rely on a single model is not good.

Wisdom Hierarchy

1) Data: raw unpacked events, experiences, phenomena
2) Information: names, partitioning
    Data is contiguous; information is divided
3) Knowledge: understanding of complexities, causes, and logical relationships
    Often takes model form
4) Wisdom: ability to identify and apply relevant knowledge
    Requires many-model thinking

Three approaches to constructing a model

1) Embodiment approach
2) Analogy approach
3) Alternative reality approach - purposely does not capture reality

Uses of models

Reason, explain, design, enunciate, act, project, explain
Reasons: Identify conditions, devise logical implementation
Explain: provide testable explanations for empirical phenomenon
Design: choose features of institutions, policies, rules
Communicate: relate knowledge and understandings
Act: Guide policy, strategic action
Explore: Investigate possibilities and hypotheticals

Many model approach: Condorcet's jury theorem

Condorcet's jury theorem : many models beat one modal
Diversity prediction theorem: wisdom of crowds.

Categorization models

The more data we have, the more granulated we should make our model

Want models to be
  1) Rule-based
        a) Simple, fixed rules
        b) adaptive
  2) Rational

Rational actor model

Decisions - payoff depends on individual's own actions
Game - payoffs depend on what others do