

Authenticity in Educational Instruction

a conversation with Ben Rottman and Tim Nokes-Malach

Outline

- 10 minutes: intro to the topic
 - Ben: inspiration for a discussion
 - Tim: one proposal for a framework of authenticity
- 15 minutes: Nancy Pfenning, Sam Donovan, Brian D'Urso, Sean Garrett-Roe, Nancy Kaufmann, Chris Schunn, others?
 - 5 minutes: summary of what we think authenticity is
- 10 minutes: Why do we think that authenticity is important? What outcomes do we think it promotes?
- 10 minutes: Should authenticity always be a goal, or only in certain classes?
- Remaining Time: Challenges to making instruction authentic?

Brown Collins & Duguid, Situated Cognition and the Culture of Learning

- Knowledge is not separable from the situations in which it is used
 - e.g., correlate - to be related to one another: “Me and my parents correlated because without them I wouldn’t be here.”
- Conceptual knowledge is like a tool - can acquire a tool but not know how to use it (e.g., statistical test)
- Learning requires enculturation (how to use the tools the way experts use them) through authentic activity. Authentic = ordinary practice of experts.
- “Many of the activities students undertake are simply not the activities of practitioners and would not make sense or be endorsed by the cultures to which they are attributed. Consequently, success within [school] often has little bearing on performance elsewhere.”
- Advocate for instruction as “apprenticeship”

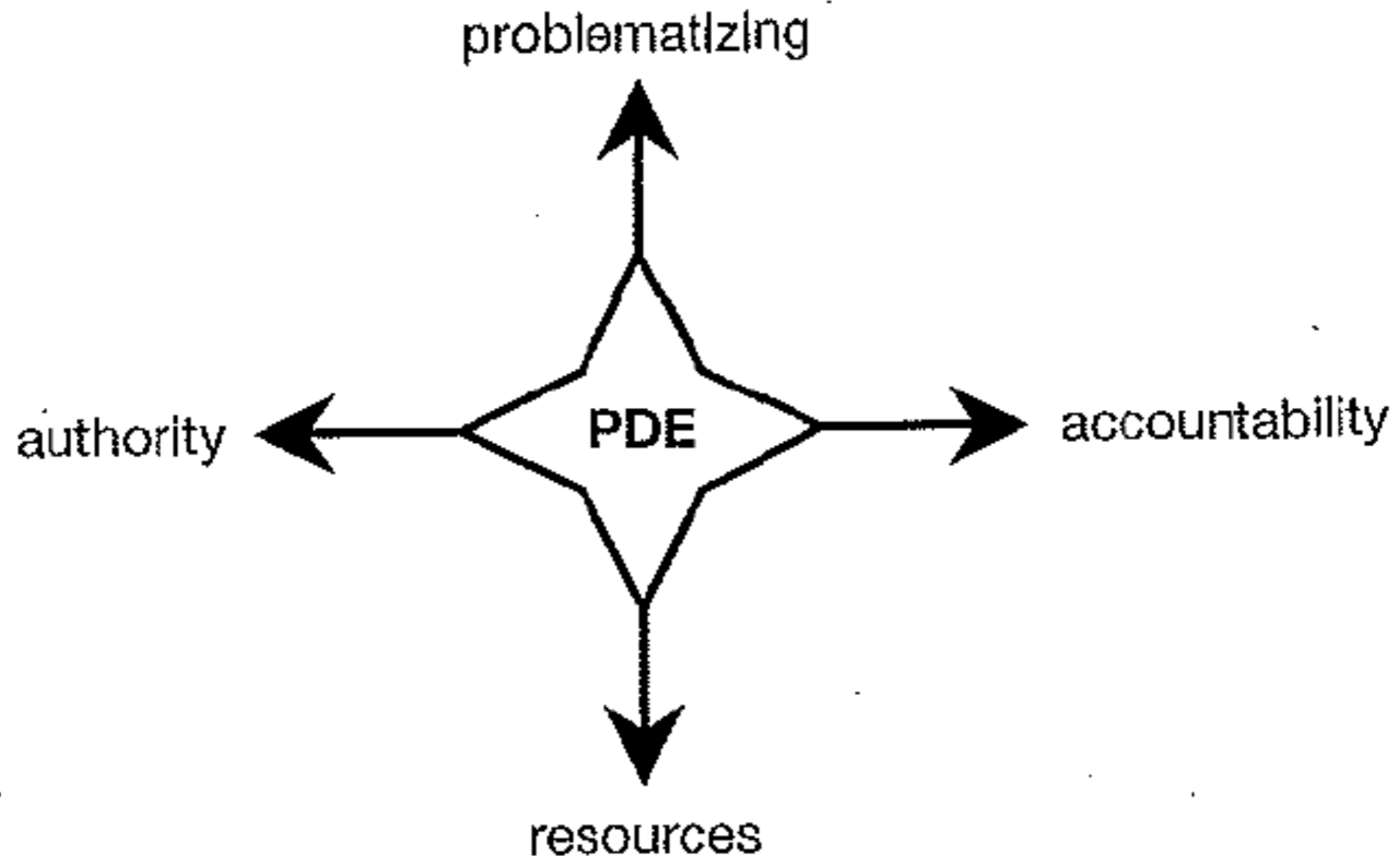
Carl Wieman: Task Analyses of Experimental Science and Most Lab Courses

- research question
- deciding data to collect
- feasibility analysis
- design, construction, and verification of apparatus, stimuli, code etc.
- **get to collect data**
- choosing analysis method
- **get to do data analysis**
- determining what correct answer is
- format for write-up (e.g., specific graphs)
- significance and context
- iteration

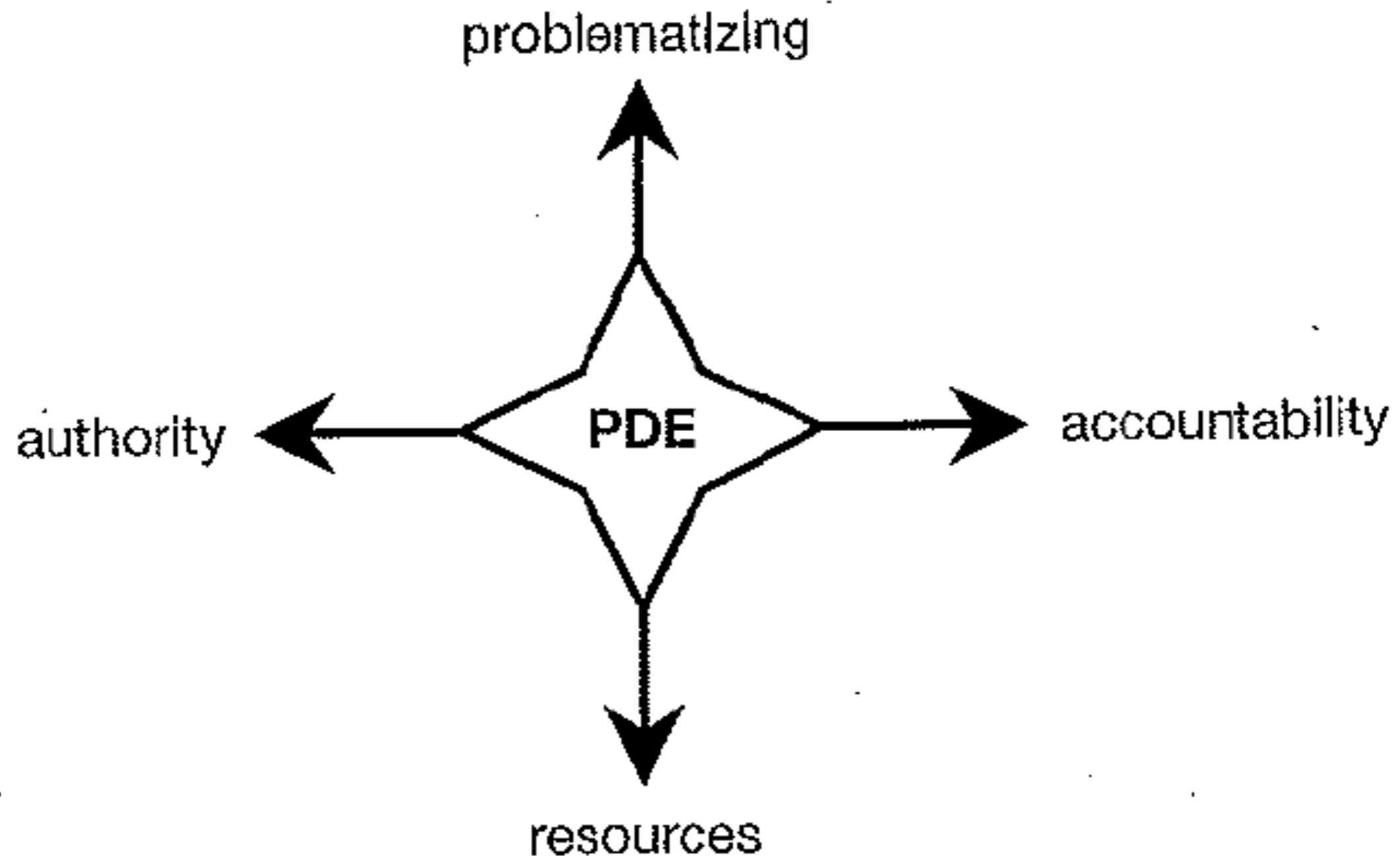
- Introduction to a culture?
- Skills instead of knowledge?
- Active instead of passive?
- End-goal and/or process
 - actually doing real science or building something useful (e.g., SEA-PHAGES)
 - faithfully mimicking a process that scientists / industry experts perform but without a real end-goal
- Promoting far transfer vs. making transfer less far
 - far transfer is easier because have practice with multiple, real, hard examples (e.g., reading multiple research articles -> transfer to new research article on different topic)
 - far transfer is not necessary because have worked with the target domain (e.g., internship in industry where you want to get a job)



Productive Disciplinary Engagement



Productive Disciplinary Engagement



Content Validity: “The measure contains all the parts that your theory says it should contain.”

Religious Commitment Inventory

1. I often read books and magazines about my faith.
2. I make financial contributions to my religious organization.
3. I spend time trying to grow in understanding my faith.
4. Religion is especially important to me because it answers many questions about the meaning of life.
5. My religious beliefs lie behind my whole approach to life.
6. I enjoy spending time with others of my religious affiliation.
7. Religious beliefs influence all of my dealings in life.
8. It is important to me to spend periods of time in private religious thought and reflection.
9. I enjoy working in the activities of my religious organization.
10. I keep well informed about my local religious groups and have some influence in its decisions.

Has:

- Guide to decision-making
- Social

Missing?

- Belief in higher power

EXIT25: An Interview of Executive Function in Dementia

1. “What color are these letters?” **RED**
2. Grasp reflex?
3. “1A, 2B, 3 what would come next?”
4. “Remember these three words: BOOK, TREE, HOUSE.” “Now spell CAT for me.” “OK, Tell me those three words we learned.”
5. “Now listen carefully. I want you to do exactly what I say, Ready? Touch your ear.” (Examiner touches his nose and keeps finger there.)
6. Rooting reflex
7. ...

Has:

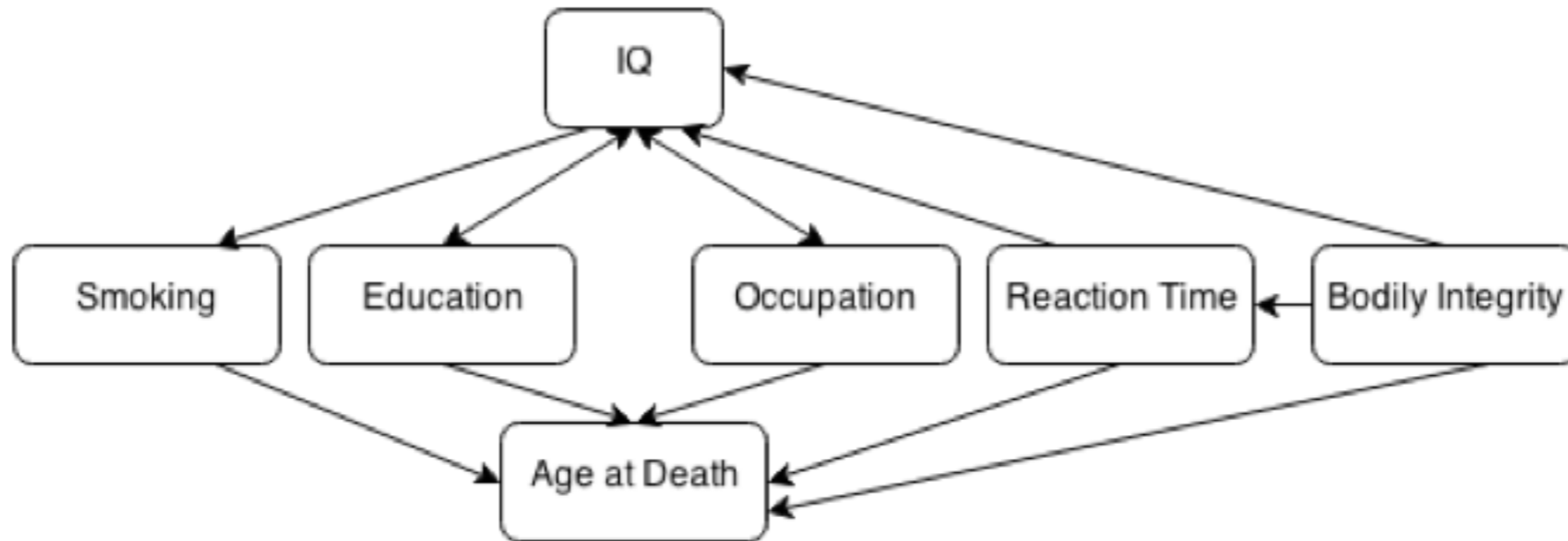
- Response Inhibition
- Working Memory
- Frontal Release Signs (primitive reflexes)

Missing?

- Awareness of time and place
- long-term memory

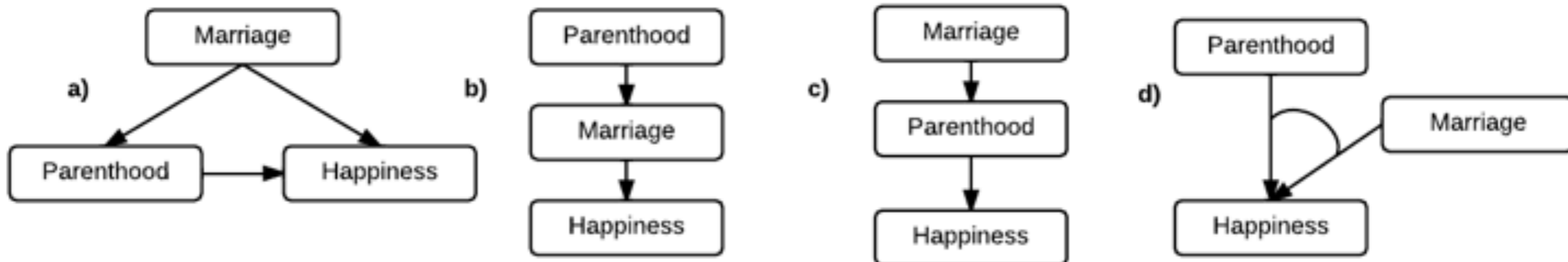
Homework

Reaction Time Explains IQ's Association With Death



Test

In Defense of Parenthood: Children Are Associated With More Joy Than Misery



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