Learning By Socialization

Shreeharsh Kelkar
Program in History, Anthropology and STS
MIT

Presenting preliminary work by Maryam Yoon and Graham Jones on the analysis of forum posts

Introduction

- Maryam Yoon, Shreeharsh Kelkar, Graham Jones and Susan Silbey (MIT's Anthropology Department)
- Questions
  - How might we understand learning through student interactions?
  - How might MOOC-type infrastructures change the university as a workplace/institution? (e.g. practices of course-making and teaching)
  - What new forms of knowledge (e.g. about students) are *produced* and how do they depend on the *institutional* capabilities of the infrastructure?

Learning as socialization

Computational Learning Models

- Learning is imbibing a knowledge proposition in the mind/brain ("mental representations")
- Student's knowledge of the proposition is *assessed* (through questions, problems)
- Questions:
  - How can student learning be computed through a set of minimal data points? Use this to
    - chart different paths through material
    - Give appropriate feedback to student

Learning as Socialization

- Cultural Anthropology
  - Learning = Performing competently in a situation
  - Cognition is a subset of socialization
- Socialization: How people become competent members of a community
- Characteristics:
  - Knowledge as practice rather than disembodied
  - Community rather than individual as unit of analysis

Situated Learning

- Learning = “legitimate peripheral participation” in a “community of practice” (Lave and Wenger 1991)
  - Legitimate = sanctioned by community
  - From peripheral participation to full participation
  - Apprenticeships: midwives, tailors in Liberia, quartermasters in the US Navy, AA members
  - Equally applicable to schooling

Examples

- Sharon Traweek (1988) on particle physicists
  - 5 stages: undergraduate, graduate, post-doctoral, group leader, statesmen/administrators, geniuses
  - each stage = particular communication media (textbooks, papers, talks) and anxieties
- Julian Orr (1996) on photocopy technicians
  - See themselves as heroic problem solvers in battle against manual-driven management [social organization]
  - Exchange “war stories” [identity]

MOOC forums as sites of socialization

What am I doing wrong?

loopy6idol 3 days ago

I am having huge troubles with this problem. I have been able to calculate a, and modeled my calculations for the rest off of Idle Mind Pro seem to get the correct answer. I keep getting 3.17*10^7 atoms/cm, which is incorrect.

(this post is about Homework 6 / H6P3: Molybdenum Density)

1. 0 DeepV

   3 days ago

   I'm betting that if you draw just the plane, like s16v5 shows, and look at the 2 dimensional view, you'll see what the problem is (m

   1. I drew the flat triangle for the vector, and have the vector as the hypotenuse. When I plug in a, however, it still gives me th

      –posted 2 days ago by loopy6idol

2. 1 fungfat

   2 days ago

   Based on your answer of 3.17*10^7 atoms/cm, I am sure you get the lattice constant "a" wrong. To get the correct "a" you have t up in the table. Once you have the correct number of atoms determined, you should be able to find "a" easily using the examples i determining how many atoms are there on the [0 1 1] vector because the density is "number of atoms divided by the length of the

   1. fungfat- I know for a fact that I have the correct 'a'. I calculated it multiple times to ensure accuracy. I have drawn a 2D ver density. I still cannot get the correct answer!!! I think that I might just take a loss on this problem. It's been driving me nuts

      –posted a day ago by loopy6idol

   2. i draw the triangle with each atom at the three edges. i have never seen this in problems or screencasts. i only familiar wit atom at the center of the hypotenuse (if am correct with my diagram); right triangle with each edge at the center of each a

      really need help.
      thanks

      –posted a day ago by barcotuba

   3. 1 trick when you get the length of the vector [0 1 1] count only the atoms that are in this segment , do not count what exce

      –posted about 6 hours ago by Hamid-ch

Techniques of Self-Presentation

What am I doing wrong?

loopy6idol 3 days ago

I am having huge troubles with this problem. I have been able to calculate a, and modeled my calculations for the rest off of Idle Mind Problem #24 from Lecture #4 notes, taking into account that Mo and Pd do not have the same structure. I can't seem to get the correct answer. I keep getting 3.17*10^7 atoms/cm, which is incorrect.

- Display competence (i.e. effort expended on problem) and trust (in community)
  - Mention the exemplar
- Ask a question, not lose face, while still getting help
- What self-presentation techniques are successful?

Managing Interactions

1. 0 DeepV

   3 days ago

   I'm betting that if you draw just the plane, like s16v5 shows, and look at the 2 dimensional view, you'll see what the problem is (made the same one) what side, and length is that vector?

   1. I drew the flat triangle for the vector, and have the vector as the hypotenuse. When I plug in a, however, it still gives me the incorrect answer!! Arrgggg.

      –posted 2 days ago by loopy6idol

- Suggest mistakes: "*I'm betting that*"
- Express solidarity ("*made the same one*")
- Managing interactions = managing displays of comptence

Managing displays of competence

2. 1 fungfat

   2 days ago

   Based on your answer of 3.17*10^7 atoms/cm, I am sure you get the lattice constant "a" wrong. To get the correct "a" you have to know how many atoms are in the unit cell of Mo based on the Crystal structure of Mo which can be looked up in the table. Once you have the correct number of atoms determined, you should be able to find "a" easily using the examples in the "additional study materials" page. After you get the "a", you can find out the "linear" density by again determining how many atoms are there on the [0 1 1] vector because the density is "number of atoms divided by the length of the vector which is the hypothenus of one of the planes." Hope this help.

   1. fungfat- I know for a fact that I have the correct 'a'. I calculated it multiple times to ensure accuracy. I have drawn a 2D version of the vector, and taken that distance. I then divide by the atoms/cm3 that I calculated from the Mo density. I still cannot get the correct answer!!! I think that I might just take a loss on this problem. It's been driving me nuts for 3 days.

      –posted a day ago by loopy6idol

- Suggest incompetence? "*I am sure that*"
  - Response: "*I know for a fact that*"
  - Again, the reference to exemplar problems

Exemplars

- *A phenomenon familiar to both students of science and historians of science provides a clue. The former regularly report that they have read through a chapter of their text, understood it perfectly, but nonetheless had difficulty solving a number of the problems at the chapter's end. Ordinarily, also, those difficulties dissolve in the same way. The student discovers, with or without the assistance of his instructor, a way to see a problem as like a problem he has already encountered. Having seen the resemblance, grasped the analogy between two or more distinct problems, he can interrelate symbols and attach them to nature in the ways that have proved effective before.* (Thomas Kuhn, **Structure of Scientific Revolutions, 189**)

2. 1 fungfat

   2 days ago

   3. staff
      0 CathB

      about 22 hours ago

      I have had to delete some posts in this thread as too much info was given in one of the comments on it (which can't be edited, unfortunately)

      Here's a useful hint copied from one of them:

      S18 exercises on linear density of Ni and Au for FCC are helpful.

      –posted a day ago by loopy6idol

How to be a good forum member

3. staff
   0 CathB

   about 22 hours ago

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   Here's a useful hint copied from one of them:

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- Give hints but not too many hints
- Allude to the right exemplars
  - The right part of the exemplar
- Self-presentation and managing interaction

Thanks!

Email: skelkar@mit.edu

Comments? Suggestions? Ideas?

Examples (cont'd)

- Jean Lave on everyday arithmetic (1988)
  - Mathematics is taught in the form of ideal-typic arithmetic problems that can be "applied" to everyday situations (managing money, shopping, dieting etc.)
  - Turns out to be false in practice
  - Shoppers
    - Use qualitative criteria to economize (cheaper markets, smaller sizes to fit size of dish or storage, etc.)
    - Consider cost of entire shopping trip rather than each item
    - Quantitative criteria only used for evenly matched items