

Experiences and Perceived Training Needs of Geoscience Graduate Teaching Assistants (GTAs)

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Research Questions

- 1) What challenges and supports did Graduate Teaching Assistants (GTAs) experience in their roles?
- 2) What were the perceived training needs of GTAs in geoscience?
- 3) How did GTA experiences differ between classroom and field settings?

Participants & Data Collection

Qualitative case study at large research-intensive institution

Semi-structured interviews conducted with 18 geoscience GTAs

2 MS students and 16 PhD students

All GTAs had classroom teaching experience

12 GTAs had experience with field course or course with field component

Data Analysis

- Emergent coding of interview transcripts
- Classroom and field experiences coded separately, using separate codebooks
- Gender neutral pseudonyms assigned to all participants

Finding #1: Contradictions between subject and tools

- 78% of GTAs feel they are **lacking training**
- 50% of GTAs found the training they received **ineffective**
- 56% of GTAs **forgot their training**
- 56% of GTAs **desired department-level training**
- 58% of field GTAs **desired increased safety measures**
- 89% of GTAs found their **personal experiences useful to their teaching**

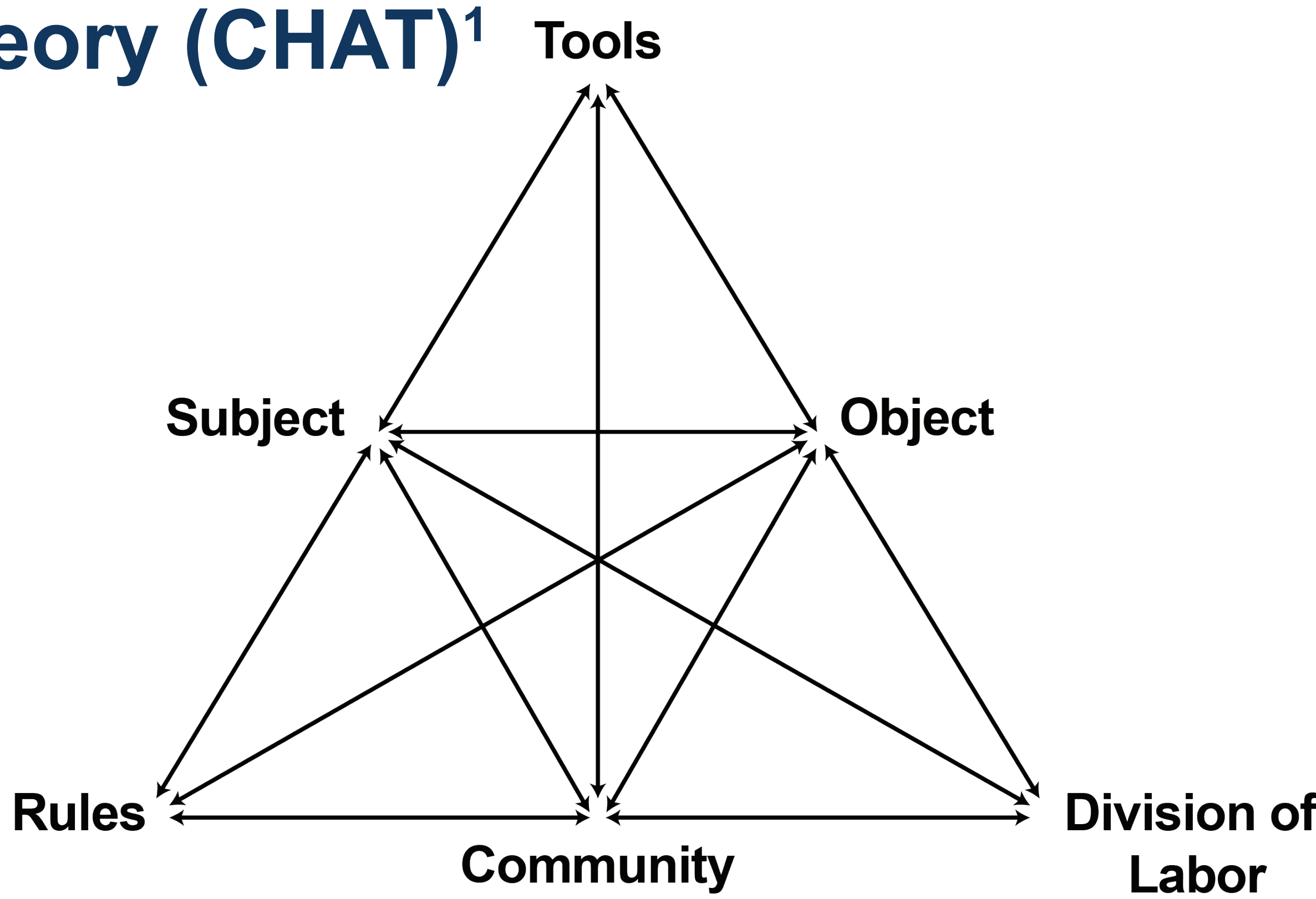
"I think courses vary so widely in the university that most of it was not applicable" - Madison

"I do think the stuff that I learned three years ago when I first started, I can't really remember exactly what they taught me." - Finley

Theoretical Framework — Cultural Historical Activity Theory (CHAT)¹

Introduction to CHAT

- Allows for systematic analysis situated within a sociocultural context¹
- Human activity is mediated by external artifacts and includes the greater community^{2,3}
- CHAT allows for identification of key stakeholders in an activity and incorporates the greater influencing context beyond strictly individual
- Includes the interaction between **subject** ("doer" of activity), **object** (*intended* outcome of activity), and **community**.
- Subject, object, and community interactions are mediated by **tools** (instruments/objects leveraged in subject's pursuit of the object), **division of labor** (who does what between subject and community), and **rules** (dictate behavior of subject and community within activity)
- Commonly depicted in the "CHAT Triangle" showing interactions and mediations

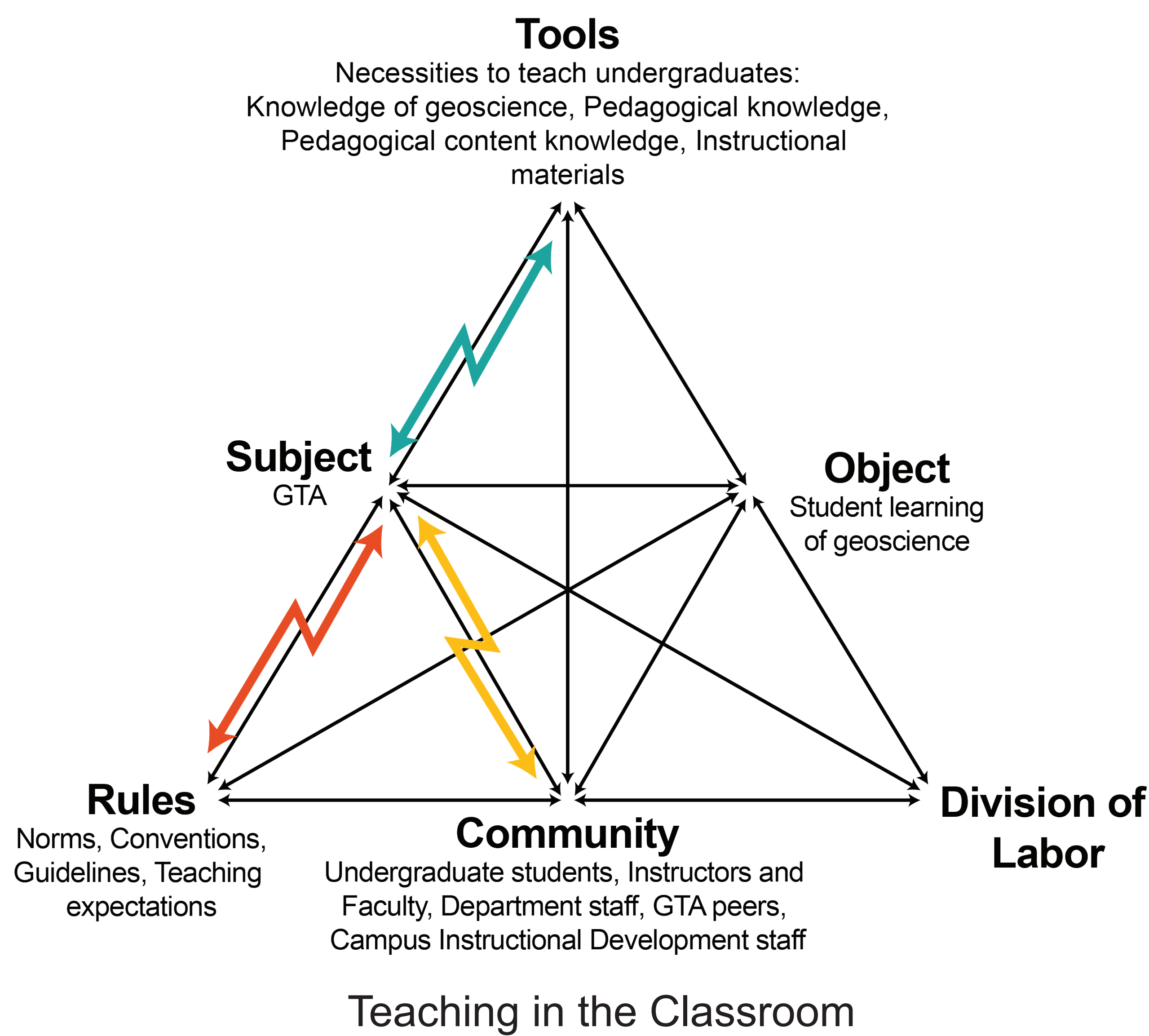
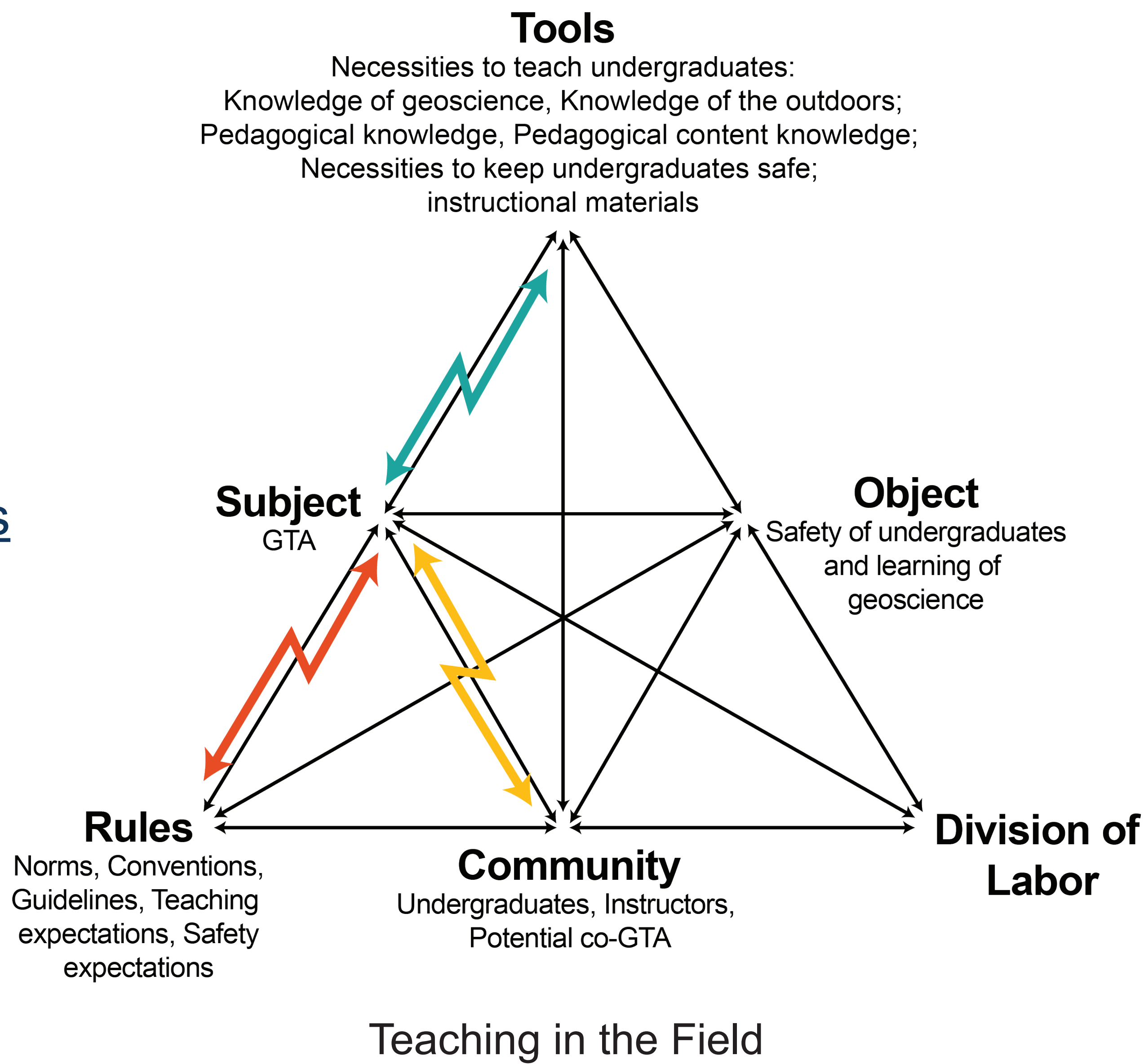


CHAT in this Study

- CHAT employed as an analytical tool
- Developed separate CHAT triangles for field and classroom teaching, to account for the importance of safety-related concerns in field courses, which were highlighted by 67% of GTAs

Focus on Contradictions

- Contradictions may lead to disruption of activity of transformation⁴
- NOT necessarily negative—simply potential sources of change within the system
- Informed our data analysis
- Depicted in our study's CHAT triangles as color coded "lightning bolt" arrows



"I wish there was, especially in our department, I wish there was a class that was like how to TA and at least to give some practice beforehand, because a lot of the time, your first time TA'ing is like day one of fall, your first [year] of grad school." - Austin

"I guess, when you asked me about training, I think that there could be much more training because they kind of just throw you into teaching." - Jamie

"I think it would be great if the department did its own TA orientation or workshop or something because the classes are so different and there's often a field component." - Madison

Finding #2: Contradictions between subject and rules

- 61% of GTAs felt there were **disparate expectations** across courses or instructors
- 61% of GTAs desired more clearly **defined expectations** for their role in the classroom and 50% for their role in the field
- Five GTAs (28%) referenced norms they experienced teaching and studying in a **research-intensive institution**.

"I like TA'ing, but every class is very different. Not even just intro class to lower division to upper division. The instructor I think dictates a lot of how a TAship feels in terms of what is expected of me." - Drew

"I would say that one of my biggest frustrations with TA'ing and then really it's a bigger frustration I have with academia in general is that professors and grad students are incentivized to spend less time teaching or incentivized to spend more time on research, right... And so of course teaching plays a component there and being a good teacher and getting good reviews...But I think we'd all agree that generally researching, publishing papers and things, is what moves you along in your career as a research scientist certainly at an institution like [this one]." -Emerson

"And then I think maybe it would've been nice to know what the boundaries are of— what your responsibilities are as a TA. What are the defined responsibilities?" - Brooklyn

Finding #3: Contradictions between subject and community

- 56% of GTAs mentioned that **dynamics with instructors posed a challenge** to them.
- 83% of GTAs felt they were **lacking support** in some way.
- 44% of GTAs desired **further instructor support** in the classroom and 42% in the field.
- When asked to describe how dynamics with students differ in the field from the classroom, GTAs discussed enjoying the ability to get to know students better. Challenges were also identified as the smaller community spends more time together.

"The issues that come up aren't so much, necessarily just to deal with the coursework, but it's more about keeping the group morale up and making sure people don't get tired of each other and keeping people happy." - Cameron (discussing field courses)

"The instructor I taught for prior...they would just give us the lab. They might go through it with us, but they would go through it with us lickety split and that was kind of just it. It would create confusion because it felt like not everybody was on the same page sometimes." - Blake

Implication

The GTAs in this study felt the campus-wide GTA training they received did not prepare them to teach in a geoscience department; therefore, geoscience departments might consider department-specific professional development opportunities for GTAs.

References

- [1] Engeström, Y. (2015). Learning by Expanding (2nd ed.). United Kingdom: Cambridge University Press. [2] Leont'ev, A. N. (1978). Activity, Consciousness, and Personality. Prentice-Hall. [3] Vygotsky, L. S. (1978). Mind in Society: Development of Higher Psychological Processes. Harvard University Press. [4] Gutierrez, K., Baquedano-López, P., & Tejada, C. (1999). Rethinking Diversity: Hybridity and Hybrid Language Practices in the Third Space. *Mind, Culture, and Activity*, 6, 286-303.

Acknowledgements

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