A Case Study of Environmental Factors Influencing Teaching Assistant Job Satisfaction

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Discussion

Have you ever been affected by your working environment while teaching? How so?
Introduction

CS Labs have it bad “dungeon rooms” in basements

Our TAs come in with little to no training and, on average, little to no prior experience

Novice teachers have been identified in the ed literature as most affected by environmental distractions

In this study we identified what environmental factors affect TAs and their interactions with students

We know that TA quality affects student success in CS1 [9] and retention [5], especially for minorities [7]; more student-TA interaction is linked to student success [6]
Context

UBC: large research-intensive university (∼45 000 students)

TAs teach 46% of our contact hours in 1st & 2nd-year CS at UBC

Undergrad and grad TAs: ∼60 UTAships, ∼150 GTAships

Labs: 20-30 students with 2 TAs in the room

Labs are standard in first & second year CS

No standard TA training
### Methods

**Interviews** were broad; no direct questions on factors that improved their enjoyment (9 participants)

**Factors which emerged** in the interviews were identified

**Observational sampling** to verify the factors (8 different participants); we recorded the duration each TA would spend in a given state

**Our ethogram** is based on Paul’s study of physics TAs [6]

<table>
<thead>
<tr>
<th>Category</th>
<th>(A) Addressing the class</th>
<th>(O) Observing student(s) or partner</th>
<th>(I) Interacting with students</th>
<th>(T) Interacting with partner</th>
<th>(N) Non-interacting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example subcategories (not full list)</td>
<td>A: announcement</td>
<td>PF: passive obs. from the front of class</td>
<td>L: listening to the student</td>
<td>G: discussing strategy</td>
<td>R: out of room</td>
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<tr>
<td></td>
<td>L: lecturing the class on a concept</td>
<td>PW: passive obs. while walking</td>
<td>F: questioning the student</td>
<td>U: updating their partner</td>
<td>G: grading</td>
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<tr>
<td></td>
<td>C: clarifying text in the lab</td>
<td>A: active obs. (&gt;5s spent on one student)</td>
<td>S: socializing with the student</td>
<td>E: explaining the lab to their partner</td>
<td>C: using computer</td>
</tr>
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Interviewed participants preferred working in the open rooms.

Traditional classrooms were described as difficult to walk in, and that “I’d wind up sitting at the front more.”

TAs in the open rooms spent 76% of their time interacting with students vs 40% in traditional rooms.

During “lulls” in student questions TAs in open rooms interact with students vs. sitting at the front of the room.
Lighting of the room

Quote: “I like [well-lit room], it feels brighter. [The lab I teach in there] feels fun, friendly, not only amongst the TAs but amongst everyone.”

Participants noted better teaching conditions in rooms with more windows.

TAs in the rooms without windows described students as asking fewer questions, and that they would approach their students less often.

Observed TAs in rooms without windows spent more time doing “non-interacting” activities, particularly surfing the web and using their phones.
Intensity

Intensity: how often there are gaps ("lulls") between student questions (not the same as # of questions)

Medium-intensity was the Goldilocks spot; "breathing time". Low-intensity is boring; high-intensity is stressful.

Intensity is affected by pacing of the lab activities; checkpoints, lab design, amount of scaffolding.

We only observed high-intensity and medium-intensity labs

TAs in medium-intensity labs spent an average of 20 seconds on each student question vs 7 seconds in high-intensity
Length

Three-hour labs were described as more “tiring” and “draining.”

Observing three-hour labs we saw no difference between TA behaviour in the first and second hours, but differences between the second and third hours.

In the third hour TAs’ behaviour was more low-energy: more observation, less announcements, less TA-TA interaction.

Low blood sugar is a plausible explanation, as is decision fatigue; maintaining authority is tiring for new teachers.
Social support

Social support was really important for our interview participants: through pair teaching and staff meetings

Security: “If there’s minor details I don’t know I can ask him [my partner]. And if there’s something I can’t explain, then maybe [he] knows how to do it…. And it’s funner when [he]’s around.”

Teamwork: “I like teamwork. Two’s a good number, two is perfect. It’s really easy to come to agreement on things. And it’s nice to have somebody covering your back.”
Social support

**Collaboration in the staff meetings:** one TA’s “favourite part of being a TA”.

**Group support:** “There’s a really friendly atmosphere between the TAs.”

**Feedback from instructors** was reported as important; encouragement highly valued and a huge influence

**Without social support** TAs feel unsupported and unappreciated, consistent with literature
Discussion

Context-specific factors will vary university to university

Constant factors at UBC, like acoustics, ceiling height and air flow, may be different for you

What factors might be affecting your TAs?

How can you make your TAs’ lives easier?
Acknowledgements

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References

S. Ahrentzen and G. W. Evans.
Distraction, privacy, and classroom design.

S. S. Bomotti.
Teaching assistant attitudes toward college teaching.

Igor and Knez.
Effects of indoor lighting on mood and cognition.

V. Muzaka.
The niche of graduate teaching assistants (GTAs): perceptions and reflections.

The impact of teaching assistants on student retention in the sciences: Lessons for TA training.

Important types of instructor-student interactions in reformed classrooms, 2010.
American Association of Physics Teachers Summer Meeting.

E. Roberts, J. Lilly, and B. Rollins.
Using undergraduates as teaching assistants in introductory programming courses: an update on the stanford experience.