Professor in a Strange Land: An Expat Metaphor for Classroom Discussions

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Abstract Classroom discussions provide many benefits to students, including practice with verbal skills, enhanced critical thinking skills, an active learning framework, and greater intellectual stimulation than an unidirectional lecture format. Although discussions' suitability for learning objectives varies (e.g., for some mathematical skills, a different active learning format could be more suitable), many courses cover material that classroom discussions can enhance. However, successful classroom discussions present obstacles for instructors, including a lack of confidence in the format's success or an inability to relate to students' perspectives. I present an "expat metaphor" for how instructors can internally relate to students during class discussions. Rather than avoiding the gap in cultural referents between the instructor and students, the metaphor exploits it toward a way of thinking about classroom discussions that is egalitarian while maintaining the instructor's authority. I describe how I run discussions in my courses, link the metaphor to them, and explain how the metaphor frames planning and moderation of discussions.

1 Introduction

Classroom discussions help students develop verbal skills, self-evaluate their understanding of course material, and reason through problems in an interactive setting [12, 7]. They further encourage student engagement by setting aside the unidirectional communication model of lectures [3]. In an informatics context, they provide a teaching method for content with a strong verbal component and, more broadly, support a liberal education-like engagement for students with a wide variety of interests [4]. From the instructor's perspective, they can be intellectually stimulating to prepare for and engaging to moderate. However, in spite of the appeal of classroom discussions, they remain difficult for some faculty to plan and to implement with

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confidence. Recognizing this obstacle and finding ways to reduce it supports a trend in tertiary education away from lectures and toward active learning.

In this chapter, I describe an "expat" metaphor for relating to students, in which the instructor is an expatriate living in a society where the students are indigenous; this metaphor frames classroom discussions in a way that may reduce the perceived difficulty of using them as a teaching method. The metaphor has no explicit presence in my interactions with students, but it informs how I guide some of those interactions. At the core of the metaphor is a recognition that the instructor is surrounded by students whose connections to contemporary sociotechnical issues are different and often more immediate. These differences arise from intuitive sources: privileges of age, experience, and relative wealth; the emphasis on youth culture in society and economy; and certain goals implicit in being a student. Rather than treating these differences as obstacles, the expat metaphor exploits them as a source for qualitative contrast, with an emphasis on students' more relevant (and *de facto* more numerous) perspectives. The metaphor also frames important similarities and differences between instructor and students: although both parties' experiences and cultural referents deserve respect, the students are effectively indigenous to the context. For the instructor, the recognition is a way of thinking about how to respect students and a motivation for interest in their concerns.

I then describe experiences with classroom discussions in two undergraduate courses. The first is a an honors introductory-level course that attracts students from a variety of majors, and the second is a course on consumer privacy that cybersecurity majors typically take in their fourth year. Sections of the honors course typically consist of 10-20 students, while sections of the privacy course consist of 60-80 students. In all three courses I divide classroom time between lectures and discussion, but the procedures for discussions vary by class size, with my instructions being more flexible for the smaller courses and more formal for the larger course. Early in the semester, I ask students to reflect on what makes a conversation work well, and I refer to metacognition periodically during the semester. The classroom discussions encourage students to reconcile information in the assigned readings with their own experiences, to synthesize a stronger understanding of course content. The expat metaphor provides a framework for students and the instructor to have rich discussions on technology and society, often leading to novel conclusions in place of predefined ones. I would argue that the authenticity of this synthesis (i.e., both parties learning something from the discussion) enhances the students' learning experience.

2 The Value of Classroom Discussions

Classroom discussions are a valuable part of pedagogy. By encouraging students to ask questions, self-assess, and selectively improve their understanding of a topic, classroom discussions belong among a set of teaching methods known as *active learning*. They further encourage students to think critically and to develop confidence verbally working through problems with their peers. Verbal skills that students

gain from classroom discussions will continue to serve them in collaborative environments in their future careers. Additionally, the interactive nature of discussions can increase student engagement and enjoyment of classroom time, leading to greater retention of course material.

Within Informatics, classroom discussions juxtapose with other in-class teaching activities, including lectures and hands-on learning. None of these activities is suitable to replace all of them, and each has qualities that justify its inclusion in a typical course. Programming skills, for example, are sometimes easier to learn with classroom time to work on exercises in groups with an instructor close at hand to provide assistance. Students may want an instructor to explain a complex topic first (i.e., through lecturing) before they engage with it directly. In contrast, to explore conceptual problems or develop skills answering questions that involve value judgements, discussions provide students an opportunity to reason through finding an answer with the help of their peers and the guidance of an instructor.

Students at different stages of their tertiary education also may benefit in different ways from classroom discussions. First-year undergraduates' early impressions of college are likely to have an outsized impact on their experience going forward. Being shown, even if implicitly, that their ideas have value is likely to support their confidence in their abilities to learn. "Big picture" discussions of their discipline also lend to students' abilities to talk about it and to articulate their interests. Further along, students in their final year of college (as well as graduate students) have reached a point in their education where summative reflection and reasoning about their discipline are meaningful and can bridge their entry into their professions. There is an aesthetic symmetry between discussions at these two stages: early discussions help to illuminate the landscape that students will learn about, and later discussions crystallize the memory of it as students transition into their careers.

The instructor also may benefit, acknowledging that teaching strengths and dispositions may vary among faculty. For some, preparation for a lecture, including planning out time usage and creating aids such as slides, is more time-consuming and arduous than preparation for a discussion. The converse may be true for others, as a good classroom discussion requires some preparation: selection of assigned reading, a brief mini-lecture to frame the topic and the conversations to follow, thoughtfully chosen questions to guide discussion, and groundwork laid earlier in the semester to help students feel comfortable sharing their thoughts. Even then, more is left to chance for the discussion than the lecture: the class could be unresponsive to the topic, individual students could be unhelpful (e.g., dominating the discussion or leading it away from the preferred topic), or the social chemistry of a specific class could be problematic. An instructor's risk tolerance for these scenarios may depend on a variety of variables, including personal preference and institutional climate.

However, the distribution of faculty (i.e., across comfort levels for classroom discussions) is neither binary nor static. It seems possible that some instructors avoid having classroom discussions but would be open to trying them. Some of the obstacles to trying them are a fear of a conversation becoming out of control, inability to judge what will provoke students to participate, or low confidence in

making effective use of the available time. For that audience in particular I provide the expat metaphor as a way to think about these obstacles and overcome them.

3 The Metaphor, Referents, and the Classroom Setting

Overall, the idea of the expat metaphor is that the students are native to the sociotechnical context of a discussion topic, and the instructor is an expatriate in their society. While remembering important boundaries and the necessity of classroom authority, the instructor can provoke valuable discussion and reflection among the students by asking questions about how the course material relates to the students' cultural and technical frame of reference. The metaphor reinforces the notion that students' knowledge perspectives are relevant to learning and worthy of respect while encouraging students to explore and deconstruct those perspectives. This metaphor might be primarily relevant for topics that merit discussion about social issues, but even in many technical courses I would suggest that some discussion of social issues (especially ethics and bias) is appropriate.

Cultural and sociotechnical referents (simply *referents* below) are an important for the metaphor. These are, broadly speaking, items that people widely can discuss. They include creative artifacts such as TV shows, movies, books, online videos, and memes, but they also include technologies that have impacted culture (smartphones, streaming video, ride sharing services, etc.) and other concepts or attitudes that many people are familiar with (the gig economy, fear of missing out, surveillance, sharenting, etc.). Equal understanding of them is unlikely to be universal, and instead it may be segmented into cohorts of people with shared cultural referents.

Having experienced being an expat helps understand the metaphor, although that experience is not essential. I draw upon a year I spent as a postdoc living in Scotland and respective periods of ten weeks in Australia and Singapore. The overlap between my cultural referents (having lived most of my life in the United States) and those places was partial, with some shared referents but many different ones. A (mostly) shared language and some common ground provided a basis for me to understand the cultures I lived in. People I met in work and in social contexts expressed some interest in my US-centric reference point, but it typically led to more engaging conversations if I asked questions about the cultural setting I was in. That interest both established rapport and increased my ability to understand the setting.

Many of the above observations have analogs for how a faculty member relates to their students' cultural and sociotechnical reference points. Crucially, the difference in reference points depends on normative assumptions about age and relative wealth: a typical college instructor is substantially older than their students, leading to a variety of differences in experiences with culture and technology, and the instructor may have greater privileges of stability in their career and finances. The instructor's past is likely to have cultural and technological referents that they relate to most comfortably, but using those referents to communicate with younger people is less likely to produce the desired results. The instructor may approximately understand

the students' referents, but not with their native fluency. The instructor may flaunt their lack of understanding for humorous effect, but the amusement is likely to be short-lived.

Instead, an effective approach for the instructor to generate discussion is to express interest in the referents that they are surrounded by, i.e., the reference points in the setting of the present, which the students are native to. Naturally, the conversation should be directed toward referents that are relevant for the course material and those that the instructor is familiar enough with to guide the discussion. Identifying those referents is the familiar task of finding connections between contemporary society and course content, but the instructor's role is less didactic than it is inquisitive: *These are contemporary issues, from your time, and I'm curious what you think of them.* While using contemporary examples is itself unremarkable in teaching, the expat metaphor reinforces respect for students' perspectives and, in a limited but potentially empowering way, recognizes them as near-peers to the instructor in a discussion.

The metaphor has limitations and caveats. As always the case with classroom discussions, the instructor ultimately relies on the students to generate respectful, productive discussion. It is possible to prime students to have good discussions with appropriate guidance, and I describe some of my approaches to this in the next section, but there are limits to an instructor's powers. Additionally, it is possible for students to reach conclusions that conflict with the learning objectives. The metaphor makes the instructor's role delicate: they must respect students' expressed thoughts while realigning them with the objectives. Finally, although the metaphor creates an egalitarian space for evaluating ideas, outside that space it is appropriate for the instructor to maintain their authority and their boundaries with the students.

4 The Courses

The expat metaphor informs my teaching style for several courses, including seminars for first year undergraduates, upper-level undergraduate electives, and graduate courses. I highlight two courses in this section as examples for comparison and contrast.

4.1 Course #1: Honors Information, People and Technology

This course introduces students to the landscape of Information Sciences and Technology, but it serves additional roles for the institution. As an Honors course, it covers material beyond the standard sections and provides students with honors credit. Instructors' choices for the additional materials vary, and in my sections, I include content on technology ethics and critical thinking about the impacts of computing technology on society. Approximately a third of the course is a non-technical

overview of basic information science and information technology (IS/IT) topics, such as hardware, software, data and databases, networking and communication, information systems security, and information systems development. I use an open textbook by Bourgeois, et al. [5] to guide this learning. Another third of the course is an exploration of technology ethics, guided with readings from Vallor's *Technology and the Virtues* [11]. The final third satisfies the course's institutional role as a *first-year seminar*: a course that introduces students to the expectations of college and resources to help them succeed. Throughout the semester, guest instructors present and lead activities around career preparation, teamwork, majors and options within the college, academic integrity, and library skills.

4.1.1 Structure for In-Class Discussion

Enrollment in this course tends to 10-20 students. Within this size range I find it feasible to have one collective discussion (i.e., instead of smaller breakout discussions), though moderation remains necessary to make sure all students participate and the discussion remains productive.

One moderation strategy is the use of poker chips as tokens to track discussion contributions. I pass around a bag of these at the beginning of class and ask students to take three, one of each color: blue, red, and white. I instruct students to turn in their blue chip when they make their first discussion contribution, and then their red chip for the second contribution. Often I ask them to wait until everyone has contributed at least once before allowing a third contributions (thereby turning in their red chip), and sometimes when all blue chips have been turned in I open the floor to unlimited repeat contributions. By asking students to show their chips on their desks, I can assess visually who has yet to speak and how evenly discussion contributions are distributed. Toward the end of class, if some students still have not contributed, I tell them they will be my "panel" (with mild humorous theatrics, to help them relax) and ask them to share their thoughts on a simple open-ended question. This ensures that all students have an opportunity to receive participation credit. Students turn in all their remaining chips at the end of the class session.

As a one-time experiment, I asked students for input on other ways we could use the colors of the chips. Briefly I experimented with blue for leading contributions, red for replies to others' contributions, and white for a Facebook-inspired *like* of others' contributions. After trying those options, I asked students whether they enhanced the discussion, and the verdict was negative. Accordingly, I used the simpler system described above.

The role that discussions play in class sessions depends on the material we are covering. During sessions in the IS/IT portion of the semester, I begin class with a lecture on the textbook material, and approximately halfway through the class time we switch to discussing a news article that is part of the assigned reading. Later, during sessions in the technology ethics portion of the semester, we begin immediately with discussion. By beginning with the half-session discussion format and then switching to the full-session format later in the semester, I allow students

(and myself) some time to assess how these discussions work with the specific composition of the class before extending their duration. For both formats, I begin the discussion by speaking for a few minutes with my thoughts on the reading. I segue into focusing on class contributions with an open-ended question, and I keep several more questions available in my notes to guide the session and revive discussion if it reaches a lull.

4.1.2 Reflections

The expat framing provides guidance for the kinds of discussion questions that work well in this course and how to respond to students' answers. The observations I make below might not be unique individually, but the metaphor bundles them into a cohesive form.

I typically focus the discussion on open-ended questions that I also (i.e., in addition to the students) find intellectually stimulating. Factual recall questions tend not to work well for multiple reasons: they create tension and risk for the students (e.g., being afraid to answer because of the risk of being incorrect), they lead students away from being able to reason through material, and they represent a mode of assessment that can be done more efficiently through exams and take-home assignments. I sometimes emphasize the open-endedness of the questions and my mutual curiosity, to add an egalitarian tone to the discussion. Examples of questions like these include:

1. In response to an article about employees feeling pressured to overwork at Rockstar Games [2], how should a manager balance the interests of a company with the well-being of its employees?
2. In response to a claim in assigned reading that "every company needs to become a software company" [8], what does it mean to act like a software company? Ostensibly this is discussed in the reading, but many answers exist.
3. In response to an assigned reading about predictive analytics for child protective services [6], what unintended consequences come with a pivot from focusing on children known to be at-risk to those predicted to be at-risk? In general, why is it difficult to get the benefits of predictive analytics for social good without drawbacks?
4. In response to an article about Stanislav Petrov [1], whose distrust of an early-warning missile detection system may have prevented a nuclear war, when it is appropriate to doubt warnings from complex technical systems? How do our value systems function when time is limited and mistakes are disastrous?

These questions illustrate a variety of cultural referents that may be nearer or further from students' native experiences. For the first question, Rockstar Games is responsible for many popular video games that current college students are likely to have played. The "software company" mentality in the second question is pervasive to the extent that younger people may take it for granted, a correlary of the article's thesis. The third question addresses the role of analytics in society, and like the second, its pervasiveness is easily taken for granted by their age demographic.

Conceptually, the fourth question is distant from the direct experiences of both the students and the instructor.

In general, I observe greater engagement with questions that are closer to students' native frame of reference. The introductory part of a class session, whether a half-lecture or a few minutes of my thoughts on the subject matter, provides additional framing to reposition those referents into the topics of the course, enabling the learning goals and allowing me to guide the conversation. I sometimes leverage my professed curiosity about the students' frame of reference to encourage them to explain referents that their peers could be unevenly unfamiliar with, such as popular memes or movies. This further helps demonstrate for students the value of their perspectives to understanding course topics.

4.2 Course #2: Integration of Privacy and Security

This course is a nontechnical introduction to computing privacy, with a focus on consumer privacy. It is a fourth-year undergraduate course that mainly enrolls students in the college's cybersecurity analytics and operations major. Students in this major have seen a plethora of content in prior courses about security, and this course serves as a counterweight toward respecting users' autonomy and preferences. Course topics include foundational theories of privacy, privacy law, the basics of differential privacy and encryption, dark patterns, ubiquitous computing, and intersections between privacy and discrimination. I use a published collection, *The Cambridge Handbook of Consumer Privacy* [9] for readings and inspiration for many class session topics. Graded assessments consist of reaction papers, participation in in-class discussions, and a term project. The term project is a group activity in two stages: a presentation of a notable consumer privacy failure and a presentation of a plan that would have avoided or mitigated the failure.

4.2.1 Structure for In-Class Discussion

Enrollment in the course tends to be 60-80 students. Within this size range only a limited amount of collective discussion is feasible; I often ask questions during lectures, but it is difficult to ensure that everyone participates and benefits from the interaction. Instead, I make frequent use of breakout discussions to distribute and parallelize participation. Toward the beginning of the semester, I explain that discussion will play a large role in the class time, and I ask students for input on what makes conversations work well. This question is explicitly for a broad scope: I encourage answers for the classroom setting and for less formal settings (e.g., the setting of a group of friends), highlighting similarities and differences. I collect the answers and review them with students, and following that, I show them the answers from the prior semester that I taught the course. This connection to others' prior efforts reinforces the validity of their work and the importance of the exercise.

Toward the end of most class sessions, I present students with one or two discussion questions. These are open-ended in a way that is similar to the discussion questions for Course #1 above: I tend to ask questions that are intellectually stimulating both for the students and for me. I ask students to get into groups of 3-4, emphasizing that two is too few and five is too many. Groups write their names and a brief summary of their answers on a sheet of paper, which they turn in to the teaching assistant (TA) at the end of class to receive participation credit. I instruct the TA to grade for completion rather than answer content. While students talk in their groups, the TA and I circulate around the room to ensure students remain attentive to the task, to answer questions, and to briefly participate in their discussions.

After a pre-announced time period (typically five to seven minutes), I ask groups to reconvene for a collective conversation. I begin this conversation by asking for "priority answers", those that groups are particularly proud of or especially want feedback for. After that I may ask individual groups to share their answer, highlight groups that I spoke with while circulating and ask them to speak, or ask for answers that disagree with those that have already been spoken. These techniques tend to be sufficient to seed a self-sustaining discussion, with students pivoting from speaking in response to me to volunteering to respond to their peers' contributions.

4.2.2 Reflections

The questions that I ask in Course #2 retain an essential open-endedness, although they sometimes incorporate basic problem solving. Consumer privacy is a fertile topic for questions that involve tradeoffs between respect for individuals, protection of individuals, risk minimization for companies, fidelity to best practices, innovation, familiarity, usability, and fairness. Some example questions include:

1. In 2015, the education testing company Pearson monitored Twitter for public posts that indicated students might be leaking questions from its PARCC standardized tests. In at least one case, Pearson contacted the school district of a student who posted test content, and the student was disciplined [10]. Was this appropriate for Pearson to do?
2. Are conversational technologies like Alexa and Siri a problem for children's development of social skills? If yes, how should parents or society respond to the problem?
3. Do different types of smartphone data (e.g., location, text messages, photos, etc.) deserve different levels of specificity when explaining data practices to consumers?
4. A store decides to use small Bluetooth beacons (i.e., small devices that sense when Bluetooth-enabled mobile devices are nearby) to keep track of customers' locations as they walk through the store, exploiting the fact that many customers have Bluetooth-capable smartphones or smartwatches. What is (a) an outrageous way to notify customers about this data collection and (b) a way to provide notice that will not discourage any customers from entering the store?

The expat metaphor is most salient for the first question: when I took standardized tests as a student, social media in its infancy and it was a negligible factor for testing integrity. I can infer and predict what concerns exist, but it is meaningful for me to disclose that students' experiences are more immediate than mine and their contributions to the topic are meaningful. The second question asks students to reflect on a time in their life that was more recent for them than it is for me, and to assume some distance from it, assessing (regardless of their personal experience) whether childhood use of a certain technology poses problems. Again, this is a combination of a technology and a stage of life that they are more familiar with than me, though I can reason about their claims. The third question addresses a technology that we (i.e., the students and me) use with equivalent fluidity but possibly different attitudes toward that use. Finally, the fourth question opens the door to differences in attitudes toward surveillance, with an invitation for both outrageous, amusing answers and thoughtful ones.

I again observe greater engagement with the questions that are closer to the students' native frame of reference. The procedure of small group discussions followed by a large discussion appears to help students speak candidly, without the scrutiny of a large audience, and vet their answers so that they can speak more confidently when the time comes to share with the entire class. Meanwhile, the expat framing is one way for me to think through respecting student answers while reasoning about them and guiding the discussion toward learning goals.

5 Conclusion

Student engagement in classroom discussions is valuable and productive—and sometimes scarce or fragile. Questions that students do not relate to or understand can produce silences that even a patient instructor cannot bear to wait out. Instructor responses to students' discussion contributions must be tuned to avoid being overbearing, patronizing, or dismissive.

A completely egalitarian discussion is, in a *de facto* sense, impossible in an instructor-led classroom. However, the expat metaphor provides some scaffolding for the instructor to organize their thoughts on how they and the students respectively relate to the course material. That organization, as I envision it in this chapter, can provide greater confidence and intentionality to the instructor, potentially contributing to successful learning outcomes.

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