

Breaking the Tyranny of Office Hours: Overcoming Professor Avoidance

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Abstract:

Studies have found that Faculty-Student Interaction (FSI) has many positive benefits for students including academic support, professional development, mentoring, and career planning. Research-intensive universities exhibit the lowest levels of faculty-student interaction within higher education. This paper utilizes qualitative methods to explore faculty, student, and staff perceptions of faculty-student interactions, particularly those that take place out of the classroom, at a research-intensive public U.S. university. We identify social distance between faculty and students based on unequal status within a rigid, hierarchically-organized culture as a key barrier to FSI. We then discuss methods that some of the faculty in our study used to mitigate their social distance with students in an effort to increase FSI.

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1. Introduction

Business leaders seek graduates with people-oriented capabilities that complement their technical skills. In the U.S., valuable competencies include communication skills, teamwork, leadership, and creativity to improve agility, and a social and global focus (Ulsoy and Wang 2010). Calls for shifts in educational approaches have been articulated by numerous groups with an eye towards long-term career performance (Crawley et al. 2011; Danielson, Kirkpatrick, and Ervin 2011; Department of Labor 2015; Good et al. 2007; National Academy of Engineering 2005). Indeed, the National Science Foundation in the U.S. has awarded 20 grants to date to help “Revolutionize engineering and computer science Departments” through significant sustainable changes. In Europe, higher education reports emphasize the need for more creative and critical thinking, digital competencies, teamwork, entrepreneurship, and effective communication (Edström and Kolmos 2014; European Commission 2017).

Engaging in collaboration in university settings is necessary to prepare students for working with diverse groups in a global world (Baker et al. 2015; Godfrey and Parker 2010). Students have the potential to learn from and with their professors and practice their interpersonal and professional skills before they enter the workplace. Many U.S.-based studies have found that Faculty-Student Interaction (FSI) is integral to student academic and professional development, influencing student career and degree aspirations (Arredondo 1995; Hathaway et al. 2002), self-efficacy and esteem (Cok[ley 2000; Plecha 2002), academic success, “persistence” (i.e., retention), satisfaction (Delaney 2008; Halawah 2002; Lundberg and Schreiner 2004; Tinto 1993), and adjustment to college life (Astin 1993; Eimers 2000; Schwitzer et al. 1999), with researchers examining FSI from various perspectives (e.g., organizational/sociological, communicative/interpersonal). Despite these differences in perspective or researcher orientation, the underlying theme is similar: FSI is beneficial to students but barriers to FSI persist in many institutions.

Although strong evidence exists that FSI benefits students’ professional and personal growth, FSI interaction outside of class remains low. Griffen et al. (2014) reviewed numerous studies and conducted one of their own at a large, public research university in the U.S. In response, another U.S. university produced a comical video styled on pharmaceutical advertisements suggesting the remedy to students’ academic troubles is to attend faculty office hours (Jaschik 2016). Given the widespread recognition among educators of the many benefits of FSI, why does FSI, particularly outside the classroom, remain so low? While FSI models vary across the globe, [this research can inform the cultural beliefs, expectations, and constraints influencing student and faculty behavior.](#)

1.1 *Out-of-classroom faculty-student interaction*

Students value learning from faculty generally (Helterbran 2008), with informal interactions having a positive influence on students (Komorrajju et al. 2010; Martin 2000). Most FSI has been documented inside classrooms (Cox and Orhevoc 2007; Hernandez, Ravn, and Valero 2015; Kuh and Hu 2001) and studies indicate that comparatively, rates of out-of-class FSI are lower than in-class (Cox et al. 2010; Milem, Berger and Dey 2000; Griffen et al. 2014) and tend to be lowest in research-intensive universities (National Survey of Student Engagement 2017). Delaney (2008) argues that students do not seek interactions with faculty out-of-class due to time constraints and feelings of insecurity. Godfrey and Parker (2010: 17) indicate that students are “clearly aware of the power and sometimes generational differences” vis-à-vis the faculty. Others have stressed that students do not always know why, under what circumstances, or how to interact with faculty outside of class, which can lead to interaction avoidance (Cotton and Wilson 2006; Vianden 2006). Many faculty lament that few students attend office hours (Hoffman 2014), the dominant model for out-of-class FSI. Indeed, a recent survey revealed

that 66% of undergraduates (i.e., post-secondary university students) never visited office hours, and only 8% attended more than once per month (Griffen et al. 2014).

While students quickly internalize campus norms regarding FSI (Chang 2005; National Survey of Student Engagement 2017), perceived faculty approachability appears to have some effect on student behaviour (Forsman et al. 2014). Displaying a sense of humour, encouragement, and active pedagogies positively influence student perceptions of faculty 'psychosocial availability' (Cox et al. 2010: 768). Faculty who are caring and exhibit a welcoming [attitude increase](#) student comfort and likelihood of seeking FSI (Einarson and Clarkberg 2004; Hawk and Lyons 2008; Hong and Shull 2010; Pascarella and Terenzini 2005). Lundquist, Spalding and Landrum (2003) found that students seek out faculty who support their needs and respond to communications in a timely manner.

1.2 The article's focus

Our interdisciplinary research team of anthropologists, engineers, and business professionals has been examining aspects of teaching and learning within the wider organizational culture of an Engineering School (ES). [We define culture as "everything you have, think, and do" \(Ferraro and Briody 2017: 10\); organizational culture incorporates that definition within an organizational setting or network.](#) To date, our research has revealed three key findings. First, students learn and adopt various work strategies, many of which are peer collaborative efforts, in response to ES culture; we illustrate the ES-major experience, or "ritual," as a bridge in time that connects declaration of one's major through graduation (Authors 2018a). Second, the programme's rigorous expectations for students, including its workload, drive students toward each other and away from the programme's faculty – a pattern we identified as 'professor avoidance' (Authors 2017). Third, while convenience is a major factor influencing academic help-seeking behaviour by students ([Authors 2018b](#)), their typical behaviours (Authors 2016) can be captured in exchanges such as the following:

Q: 'When you need academic help, who do you ask first?'

A: 'Honestly, first would be group of friends. 'Hey, have you guys done this problem? Do you understand it?' Second would be the TA (Teaching Assistant) hours ... whatever times those are at. And then if those fail, then just Internet.'

Q: 'Is the professor on that list?'

A: 'Not really.'

The impetus for this article is to describe and explain FSI within the broader organizational culture of a university department. The literature, our past research included, prompted us to pose the following questions:

- How do students conceptualize their relationships with their professors in a public U.S. research institution?
- What insights can be gained about FSI behaviour by analysing what study participants say to us and to each other?
- Why are students reluctant to initiate interactions with faculty in this organizational culture?
- What can be done to change the pattern of professor avoidance?

Based on earlier findings (Authors 2017), we suspected that professor avoidance was a function of differences in status and power between faculty and students. To describe this pattern fully, and explain and validate it, we explore student views and compare them with those held by faculty and staff. We also present some workable strategies to improve FSI frequency and quality [at this institution, whose culture is consistent with many large, research-intensive institutions in the U.S.](#)

2. Theoretical approaches

We employ two theoretical orientations in our investigation: cultural models and social distance. Both have been used by anthropologists and other social scientists to characterize and explain cultural dynamics in a variety of settings. By combining these two approaches, we believe we will be able to 1) capture how students conceptualize and interpret actual or desired interactions with faculty, and 2) place such interactions within their cultural context, taking into account role and status differences.

2.1 Cultural models

Cultural models are defined as viewpoints or understandings of a particular situation, experience, or context (Holland and Quinn 1987). Members of a particular culture are asked to describe key elements of their culture. Researchers then abstract a consensus description (or cultural model) from the mix of member descriptions. The cultural model is subsequently validated both by other members of the culture and by other empirical data (e.g., observation, surveys). As such, it is both an individual and a collective representation of the culture or cultural experience. [Moreover, it is a flexible approach that can be applied in any organization, and it supports the broad applicability of the approach we take in this research. We further expect that the cultural models identified here are broadly representative of many other large research institutions in the U.S.](#)

Cultural models represent perceptions of how the culture works. While they are shared within subcultural groups, they are typically tacit rather than explicitly known. The understanding of cultural models “can improve dialogue among stakeholders” and lead to solutions “to promote collaboration and learning” (Paolisso et al. 2013: 15). This approach has been used in medical anthropology and health care studies (Kleinman 1980), industrial ethnographies directed at cultural change (Authors 2010; Paolisso 2007), environmental issues (Miller Hesed and Paolisso 2015; Paolisso et al. 2013), changes in belief systems (Shepherd, McMullen, and Jennings 2007), and conflict resolution (Hirsch 2000). We expect that the application of cultural-models theory will enable us to explore study participant conceptualizations of the organizational culture in an accurate, holistic, and robust way. Moreover, we believe that it will offer an in-depth, insider view of the organizational culture that cannot be derived from survey research or studies of contrasting values ([Hofstede 1991; Hampden-Turner and Trompenaars 1993](#)).

2.2 Social distance

Academic hierarchies are central to organizational culture in higher education (Bourdieu 1984). Universities are typically described as being starkly hierarchical and ordered by social (e.g., age, gender) and professional (e.g., rank, degree) stratification. Sociological theories of social distance offer a useful framework for understanding the influence of organizational hierarchies on human behaviour. Social distance, as opposed to spatial distance, was originally used in studies of class inequalities in urban areas to illustrate how individuals can occupy the same physical spaces while maintaining distinct social spaces (Bogardus 1926). Social distance is the perceived or desired closeness/remoteness between members of different groups (Bourdieu 1989). In higher education, including the university domain that Bourdieu (1984) studied, social groups are frequently defined by level of education and professional role, with faculty holding higher status than students and staff.

Social distance can be characterized by the accepted levels of intimacy and informality within a group (Bourdieu 1985); [other writers refer to this differential as power distance \(Hofstede 1991\) or equality vs. hierarchy \(Hampden-Turner and Trompenaars 1993\)](#). In general, the greater the social distance between two people or two groups, the less intimate and more formal their interactions, and the more rules govern their interactions. [In addition, social distance is correlated to the nature of those relationships, either based upon authority or consultation \(Hofstede 1991\), and therefore the productive outcomes of](#)

those relationships. For example, in an education setting, faculty typically expect undergraduate students to address them using titles (e.g., Professor, Dr., an authoritative approach) but do not use titles when addressing students, verbally signalling social stratification between the two groups and discouraging the kind of consultative relationship evident in small-social-distance relationships. The educational consequences of distant student-faculty relationships are generally negative from the student perspective, and they have been widely reported in both U.S. (where it might be called behavioural and cognitive involvement or engagement [Astin (1993); Brint, Cantwell, and Hanneman (2008)] and European (where it might be called energy, dedication, or absorption [Salmela-Aro and Upadaya, 2012]) contexts. Individuals with higher status usually determine the boundaries of interaction and set acceptable levels of intimacy and informality while those with lower status turn to them for cues about how to interact appropriately. Given our anticipation that status and power differentials would play a critical role in university culture generally, the social distance literature seems pertinent and relevant to help frame our work.

Cultural-models theory reveals how people conceptualize aspects of their culture while, social distance enables us to understand how hierarchy and power influence interactions. We anticipate that student initiation of FSI will be influenced by the boundaries that faculty set since the “responsibility for creating and maintaining relational boundaries falls on the instructor” (Hoffman 2014: 18). Nevertheless, when faculty approachability is high (Attinasi 1989), social distance may be reduced, with consequent benefits for students.

3. Background

3.1 Cultural context of higher education

Post-secondary educational institutions are distinct culturally, influenced by their size, offerings, reputation, and population, among others. The vast college-university ecosystem has been described as a ‘pyramid’ in which large research universities are positioned at the apex, with liberal arts colleges, community colleges, and vocational schools located in descending order toward the pyramid’s base (Bergquist and Pawlak 2008: 34). Writers have pointed to the effects of the German university on American higher education to explain the primacy of research (Bergquist and Pawlak 2008; Clark 1987; Damrosch 1995; Milem, Berger and Dey 2000; Roche 2017). The research university is the “model that all other institutions strive to emulate” (Austin 1990: 63), suggesting its high status. Clark (1980) discusses the increased specialization within disciplines and the fragmentation within faculty culture and between faculty culture, on the one hand, and student culture on the other. Indeed, “research is valued over teaching” (Damrosch 1995: 44), due in large part to the increasing emphasis on external research funding (Bergquist and Pawlak 2008; Roche 2017). Perceptions of time “as a commodity that must be used efficiently” (Ferraro and Briody 2017) and the ‘busyness factor’ (Darrah, Freeman and English-Lueck 2007) also play a role in the North American university context.

Hierarchy and status differences appear across and within university social relationships, although with significant variation. In Continental Europe, resources are “individually designated” and professors are “the masters, [with a] subordinate academic staff,” whereas in the British higher-educational system, “tensions among the ranks of academics are less pronounced” (Neave and Rhoades 1987: 215, 217). In the U.S. and Canada, collegiality is a key feature (Bergquist and Pawlak 2008) within a context in which professors are differentiated by rank (e.g., assistant, associate) (Kuh and Whitt 1988; Clark (1989), and thus, status. Each of these faculty dispositions directly influences their organizational relationships. To the extent that an academic setting is highly status-driven, students (the lowest-status members of the organization) are positioned to suffer negative consequences in academic and professional ways.

Missing from the literature has been a robust discussion of the organizational culture of academic departments and schools such as engineering (Lee 2007), even though the department “has become the basic organizational element” in U.S. higher education (Austin 1990: 63). Tierney (2014) argues that experimentation is not rewarded, compromising innovation processes, while Donaldson and Graham (2018) stress inertia and resistance to change. Indeed, for sustainable reform to occur, effective leadership must be present throughout the organization (Fullen, Cuttress, and Kilcher 2005). Faculty time allocation studies offer some insight into cultural dynamics (Milem, Berger and Dey 2000; Ziker et al. 2017), [and there is general alignment in faculty time allocation for teaching and research activities in the U.S. and \(Western\) European universities \(Bentley and Kyvik, 2012\)](#). Nonetheless, organizational culture is shaped by all members, including faculty, students, and staff.

3.2 Setting

Our Midwestern U.S. university with an undergraduate enrolment over 30,000 has been designated as an [R1 doctoral university with ‘very high research activity’ \(http://carnegieclassifications.iu.edu/classification_descriptions/basic.php\)](#). In programme brochures, faculty are described as leading ‘world-class research programs.’ They are hired primarily for their ability to conduct innovative research generated through external grants.

Faculty typically teach 1-2 courses per semester, with a number ‘buying out’ their course time with research grants. They collaborate with each other in teaching engineering fundamentals to incoming ES majors. In these large lecture courses that typically involve 120 students, faculty follow a common syllabus, design examinations together, and settle on specific grading criteria. They also teach third- and fourth-year university classes with far lower student enrolment. Many curricular changes toward project and problem-oriented coursework have occurred, as have pedagogical shifts toward active learning. Faculty are supported by ES [staff whose job functions](#) include lab instruction, research (e.g., as graduate student assistants), management and supervision (e.g., shops, labs), academic advising, and administrative tasks.

At the time of the study, the ES represented the largest university major with about 1,400 undergraduate students and a faculty-to-student ratio of about 1: 20. It is also one of the most competitive in terms of admission [to the bachelor program](#). Students apply for admission while in the First Year Engineering programme. Those admitted become affiliated with ES as second year students (2YS), or sophomores. The ES major, leading to a Bachelor of Science degree, requires 128 credits for graduation. Programme documentation is designed to recruit ‘Renaissance’ students driven to ‘excellence’ with students from around the world. Brochures indicate students develop ‘practical hands-on skills’ in addition to analytical skills, experience through co-ops and/or internships, gain ‘global perspectives’ by participating in engineering programmes abroad, conduct ‘cutting edge research,’ and seek ‘sustainable solutions.’

4. Research methodology

Anthropology focuses primarily on cultural groups (not individuals), and the themes and patterns emerging from their interactions, practices, and other behaviours. The methodology we use is iterative, following the research cycle of exploration, confirmation, and validation of the data collected and analysed (Trotter and Needle 1999). Three hallmark concepts are especially relevant:

- **Culture**, which [we defined in section 1.2 \(‘everything that you have, think, and do’\)](#).
- **‘Emic’ and ‘etic’ perspectives**, which take into account insider and researcher points of view in explaining culture and cultural differences (Pike 1967).

- **Induction**, which is a research approach involving the “search for pattern from observation and the development of explanations – theories – for those patterns through a series of hypotheses ... (that) are tested against new cases ...” (Bernard 2011:7).

Using these concepts, we address Cox and Orhevoc’s still-relevant critique that “nearly every recent study of faculty-student interaction has used quantitative analyses to study what is a highly personal, complex set of experiences for both faculty members and students” (2007: 346).

4.1 Data collection

We collected both individual and group interview data. The one-on-one interviewing occurred in 2015 while group interviews predominated during 2016-17. Given that our research was exploratory, we designed our research questions to be open-ended. Over time, the questions became increasingly focused on specific topics for detailed investigation. “Research questions evolve as complexities in the field become clearer” since the responses to some questions reach redundancy or new questions appear that were “not anticipated when the project was originally designed” (LeCompte and Schensul 2010:198).

4.1.1 Individual Interviews: We conducted 37 one-on-one interviews to understand ES culture from multiple perspectives. Table 1 lists the number of interviewees by their role in the ES as well as the average duration of the interviews. We recruited 11 faculty, 14 staff, and 12 ES majors using nominated-driven sampling (Fetterman 2010; LeCompte and Schensul 2010; Needle et al. 2003). Such sampling practices are common in anthropological research, especially in organizational and community settings, because study participants are cultural experts. They understand how various cultures (e.g., ES, family) with which they are associated work. Ideally researchers seek study participants who both *have* cultural knowledge and experience of the culture being studied and *are willing to share* their knowledge and experience. In this sampling model, researchers build rapport with specific individuals who then recommend others that might be willing to speak with the researchers. Rapport-building establishes a beginning foundation of trust which carries forward when one study participant suggests another. About 80 percent of the interviews occurred face-to-face while the remainder were conducted by phone.

Table 1. Individual interview sample by duration

	Faculty	Staff	ES Majors	Total
Number of Individual Interviews	11	14	12	37
Average Duration (in minutes)	53	56	52	54

Our questions were designed to capture ES organizational culture. We asked all interviewees to describe their day-to-day activities. Sample questions included:

- If you were speaking with a friend or family member and that person asked, ‘What is it *really* like in the ES?’ what would you say?
- What is a typical or composite day like for you?
- Tell me about your experiences interacting with faculty (or with staff; or with ES majors).
- What would you say are the current strengths and weaknesses of the ES?

We asked additional questions in our interviews with ES students such as:

- To whom do you go for academic help?
- In what extra-curricular activities do you participate?

4.1.2 *Group Interviews:* We conducted 23 group interviews with ES majors and one group discussion with three academic advisers in the ES. Sampling was based on an open-call in selected courses where an overview of the study was provided; students could self-nominate to participate. Our intent was to supplement the individual student interviews, particularly those 2YS transitioning into the ES major. Newcomer perspectives and behaviour are critical to capture the elements inherent in ES culture, including the work strategies that students employ to be successful (Author 2018a). 2YS accounted for 78 percent of all those participating in the ES-major group interviews. Key questions included:

- What have you learned about being a student in the ES from others?
- To whom do you reach out for help?
- What lessons have you learned about how to be academically successful in the ES curriculum since you have been here?

Table 2. Group interview sample by number of bachelor students and duration

	4 th Year Students (4YS)	3 rd Year Students (3YS)	2 nd Year Students (2YS)	Total ES Majors
Number of Group Interviews	2	6	15	23
Number of Participants in Group Interviews	6	14	72	92
Duration (in minutes)	138	411	866	1415
Average Duration (in minutes)	69	69	58	62

4.1.3 *Documents:* We explored the university and ES websites (e.g., areas of concentration, values, strengths). Descriptive ES brochures for prospective students, majors, and faculty provided information from course offerings, to workplace exposure, to study and work opportunities abroad.

4.2 Data analysis

We audio recorded all of the discussions and took extensive notes. To ensure transcription quality, we compared a sample of the transcriptions with our notes and addressed any discrepancies.

We used content analysis (Bernard 2011; Fetterman 2010) to identify themes and patterns, engaging in an ongoing or constant comparison of what we were learning. Two of us coded sections of text, attending to the cultural context and interviewee role (e.g., ES major, faculty); any disagreements were resolved through discussion. This content analysis was completed in stages, with the group interview data validating themes and patterns from the individual interviews in an iterative process. The group interviews first clarified four broad categories associated with the individual interviews: 1) the quality of relationships, 2) the student experience (e.g., building networks, spending time), 3) help and support-seeking behaviour, and 4) mental health and stress (e.g., due to workload, transitions). They also strengthened our confidence in emergent themes from the individual interviews – particularly, low FSI, student desire for FSI, and faculty-student status differentials – themes that appeared in all individual and group interviews.

We also employed discourse analysis to understand the cultural dynamics associated with student-reported or desired interactions with professors (Garcia 2013). Anthropologists take into account the terminology and syntax used, speaker characteristics, content and functions of the communication, cultural context, and the implications of what and how the communication occurs. The point of a discourse analysis is to craft “arguments for a specific claim (or claims), or hypothesis (or hypotheses)”

(Gee 2014:142); the transcribed data is examined for evidence of support. We followed a process similar to the one for the content analysis, except that we identified sections of text in which group interview participants conversed with each other. We coded these mini discussions using the same process followed during the content analysis.

Next, we examined our data set for evidence of similarities and differences [across data sources and analysis approaches](#). We triangulated across data collection types (e.g., interviews, documents), analysis types (e.g., content, discourse), and researchers to ensure analysis quality. For example, portions of discourse from group interviews helped gauge the extent of consistency with the individual interviews. Based on these analyses, we developed a coherent narrative that depicted the findings and offered an explanation of them; verbatim statements and recorded interactions during group interviews illustrated the results. Additionally, our analysis was validated with selected ES members, engineering and anthropology faculty at several universities, and several professional anthropologists. We used both formal presentations and informal conversations during the validation phase.

5. Results

In this section, we review evidence related to student and faculty experiences of FSI as seen through the lens of organizational culture. Common themes expanded upon in this section include an intense sense of being busy, for both students and faculty (Sec. 5.1), the practical result of which is less time available for productive FSI. Next, we review student approaches to help seeking, and in particular, the foundations of the cultural model that show both what it is (Sec. 5.2), and what students desire there to be (Sec. 5.3). Finally, we review evidence related to the broad theme of professor avoidance (Secs. 5.4-5.6) and how to remedy it (Sec. 5.7). Taken together, this evidence paints a picture of generally weak FSI driven by time pressures and a strongly hierarchical culture characterized by a large social distance (Hofstede, 1991).

5.1 Being busy

The word ‘busy’ appears repeatedly throughout our transcripts, suggesting its importance and relevance as a defining characteristic of ES organizational culture. Faculty, staff, and ES majors employ the term (see in bold), referencing either themselves or others:

- *Faculty*: I always let them (staff) know, ‘If I ask something that you think is outside of your job scope, or are **too busy**, please just let me know.’
- *Staff*: ‘When we have outside activities or social events or anything like that, you don’t see a lot of participation with ES as a whole maybe getting together and having an event...because people are **too busy**.’
- *4YS*: ‘My first two years I took 16 (credit hours) every semester but my junior (3rd) year I only took 13 hours both semesters and that was **insanely busy** (due to increased course difficulty).’
- *3YS*: ‘There are some professors that I would trust to do it (write a letter of recommendation) and then there are some professors that I feel would maybe be **too busy** to write a thorough, good one.’
- *2YS*: ‘They’re **extremely busy**. A lot of faculty here have research that they’re doing, and that takes a lot of time.’

These statements, and others like them, suggest that being busy is not due to chance. It affects all ES roles and is tied to particular work practices: researching, teaching, learning, and providing technical and administrative support. Moreover, such descriptions underscore an understanding of ES organizational culture as fully-scheduled and fast-paced.

Programme documentation for ES majors is consistent with these cultural characterizations. Programme documentation indicated that ES majors took an average of 14 credit hours per semester. It also specified that 90 percent participated in internships or co-ops, 40 percent had some kind of engineering experience abroad, and that involvement in various student-led organizations could supplement the academic experience.

Brochures and websites incorporated the word ‘rigorous’ to signal academic expectations for students. Indeed, the demanding curriculum seems to be linked to the concept of busyness. For example, a 3YS commented, ‘It is very busy. Everyone works very hard. You can walk into a lab, probably at midnight, at any given night, and it is probably going to be full. (She laughs).’ A 4YS offered. ‘It seems like maybe it’s us against the school...It just seems like there’s this wall of schoolwork we have to get over and we’re all on one side.’

5.2 Accessing and avoiding academic support

The tie between being busy, and student descriptions of their workload as ‘intense,’ ‘difficult,’ and often ‘overwhelming,’ raises questions about effective academic-help-seeking strategies. Students access a wide variety of resources including instructional videos, the Internet, and the tutorial rooms staffed by teaching assistants (TAs). Student discussions of academic help-seeking centre predominantly on the role played by their peers. A 4YS pointed out, ‘Typically, I’ll study with at least one or two other people, or maybe once or twice a week to study for an exam I’ll typically study with people.’ A 3YS stated, ‘If none of us are understanding it, then we would approach a TA or go to one of the help (tutorial) rooms.’ [Students generally reported strong peer-based, help-seeking strategies because they were judged to be both effective and efficient.](#)

5.3 What students say they want from professors

ES majors told us that they wanted more from their professors than class lectures. ‘Just encouraging us to go the extra mile’ would be an example of a caring and engaged teacher, according to one 2YS. Students would like to interact with their professors more frequently and in smaller groups or individually. They look to professors for mentoring beyond course work including networking, career advice, and research opportunities. Strikingly, many ES majors indicated that they simply wanted to be on friendly terms with their professors.

- ‘I just want to be able to walk down the hall of the (ES) building and see my favourite professor and be able to say, ‘What’s up?’...I want to get to a point...where I feel like I can just go to them and talk about whatever...engineering related, and just be able to have a conversation – not worrying about it being like a faculty-student...but more as an equal, and less as me scared to talk to my professor kind of thing.’ (2YS)
- ‘You could sign up for extra credits to do a project...We got face time with Professor Neil¹...twice a week actually. It made me realize that I could have a personal relationship with my professors and that that personal relationship is really helpful.’ (4YS)

Phrases like ‘personal relationship’ and ‘personal connection’ commonly appeared in these discussions. Students appreciate it when professors know who they are, especially their names. Similarly, students are curious about their professors: their interests, the struggles they faced as students, and the paths they took in their careers. One 4YS articulated a key value of building a relationship with faculty: ‘that really helps people with (building) a professional relationship.’

¹ All names appearing in this paper are pseudonyms.

5.4 Professors as a potential source of help

If ES majors approach their professors for academic help, they report accessing it in four key ways. First, they may ask questions during class as in this 3YS comment, 'It was a smaller class...the professor would walk around, and we'd ask questions.' Alternately, they may approach a professor immediately after class. Another 3YS stated, 'I would often stay behind lecture for a few minutes to maybe ask some follow-up questions.' A third option entailed emailing the instructor. A 2YS told us, 'Pretty much we don't have TAs for (our class)...We just have a professor. So, often my questions go to him (via email). He is very good about when he gets a question. He'll answer it to you and then he will post frequently-asked questions...Email's often more convenient.'

Students also access faculty help during office hours. One 4YS pointed out, 'The professors normally do have their own office hours, but sometimes they're flexible enough to schedule around your time which is pretty nice. I've actually taken advantage of this a couple times, which...takes some of the stress off.' This exchange occurred with two 2YS:

Interviewer: 'When you went to office hours, how was that experience?'

2YS A: "It was really helpful...the first thing he said was, 'Alright, when you get this exam back, we're going to go through every problem and make sure that we know where you're going wrong (and) what you need to work on.'"

2YS B: 'I went before one of my exams and it's definitely really helpful because there is a small group of us with our professor. It was more of a group planning environment – which was good.'

Another 4YS reported: "Just the experience of me telling him (the professor) 'I've really messed up the exam.' He was just like, 'This happens. Just let it go. Focus on this. I want you to review these topics.'"

ES majors reported approaching their professors out of necessity—almost as a last resort—and the hope that they will benefit academically. While these interactions were most frequently related to the technical content of the course, they sometimes pertained to career-related preparation (e.g., internships, research opportunities) or career options. Speaking of one professor, a 2YS commented, 'I went to him and asked his advice because I trust his judgement.' A 4YS indicated, 'I talked to Professor Datta...He thought that I should stay in school and that's what ended up happening...It's just nice to get that because (he was) more impartial than other people I had asked.'

In general, however, students did not routinely initiate contact with professors outside of class even if those professors were widely-known as approachable; this pattern held regardless of student or faculty age, gender, or number of years at the university. For example, a 3YS commented, "I love my professors this year, but I just never think of going to office hours...There's no real academic incentive to have strong relationships with them." Nevertheless, approachability did have positive effects on student perceptions of their professors. A 2YS explained that her professor took photos of each team to learn students' names:

He knew exactly who we all were...I thought that was absolutely amazing...That extra time that obviously he took to get to know each one of us I think was something. That really affected my opinion of him and also that class. I think I worked a lot harder because I wanted to do well because I liked the way he talked at class and I enjoyed his teaching style.

A 3YS stated, "He (professor) will come up and say 'hi' to me and ask me about how everything is going and stuff. And it's always nice having a friendly relationship with your faculty."

5.5 Defining professor avoidance

We coined the phrase 'professor avoidance' to characterize a common student behaviour pattern identified during the individual interviews involving ES majors and faculty. Despite the examples

presented above, most students in our sample reported that they rarely initiate contact with their professors, particularly outside of the lecture hall or classroom. One professor commented, 'Right now, only the students who are very high at the initiative level...are able to...work with faculty members...If we can build new channels in which... the barrier to doing that (FSI) gets lowered somehow...that would significantly enrich this place.' He confirmed, 'Only a few (students) actually interact with them (professors) outside class.' In sharing this finding with faculty in other schools or universities, we were met with smiles, laughter, and prolonged discussion, validating our insight.

ES majors offer emic (i.e., insider) explanations for professor avoidance. First, they indicate they have access to many resources including 'friends,' the 'tutorial rooms' staffed by TAs, and other resources (e.g., internet, supplementary instruction) – all valued because of their proximity, availability, and immediacy. Second, ES majors point out the mismatch between their daily schedules and their professors' office hours as in this 2YS statement: 'My professors' office hours are during all of my classes, so I just can't go at all.' Misaligned schedules can be an impediment to student-faculty face-to-face interactions. In related research, we found that students viewed professor office hours as the least convenient resource available and therefore, the last resource accessed, if at all (Authors 2018b). A faculty member concurred, 'Mind you we have time (i.e., office hours) set up for them but little (sic) take advantage of that.'

A third justification is captured in student concerns about their professors' workload. A 2YS stated, 'They're extremely busy. A lot of faculty here have research that they're doing, and that takes a lot of time.' A 4YS pointed out, 'There is also the occasional faculty who is either never there or does not appreciate you barging in – which is understandable if they are busy.' A professor agreed, 'It would be nice when students are struggling that it be an environment where they really feel they could come and interact with professors and move forward...But (due to) the constraints of the job, and timing, and we're all over the place, (so) it's very difficult.' The faculty in our sample are indeed literally and metaphorically 'all over the place', in the sense that this department has multiple research facilities spread across campus, the faculty frequently travel, and the cognitive demands of the professors' jobs sometimes prevent them from focusing on student issues in a sustained way.

Finally, students admit that their own time is limited. One 2YS commented, 'It's hard for us to get the time,' while his peer stated, 'I always have this afternoon block of four hours of class. I never have the time to go...'. These busyness arguments could be a reasonable explanation for the low priority students placed on FSI, but we suspected other (cultural) factors may have been at play.

5.6 Professor avoidance complexity

All of the emic explanations make sense, but none can explain why students neither request particular appointments with professors, nor why they do not routinely email them. For possible clues, we decided to focus on student discourse related to FSI.

5.6.1 Expressions of Contrasting Sentiments. Many students commented on circumventing office hours. One 2YS reported, 'You don't want to go there with a question that you think is silly or something,' while another stated, 'Maybe it's a little intimidating?...They (faculty) are kind of a stand-alone group, where they're actual adults.' A third 2YS indicated, 'I prefer when a peer would explain a problem to me, just because we are talking the same language and if I cannot add and subtract numbers at least I'm not doing it in front of the professor...'. Two 3YS had this exchange during a group interview:

3YS A: 'I already know I'm gonna (sic) mess up (if I go to office hours).'

3YS B: 'Yeah, exactly!'

A 4YS expressed a similar view: 'I don't think I ever went and talked to a professor about homework until probably this year. I went through the first six semesters of my college career without really communicating with a professor a whole lot, which I probably shouldn't have done.' A staff member confirms: "Undergraduate students have an awestruck relationship with a lot of our faculty. It's, 'You're a PhD professor. You're exalted.'"

While unease and awkwardness seem to permeate these statements, other comments reveal a sense of astonishment and delight resulting from a professor's actions. For example, a 4YS recalled a conversation involving a peer and their professor: "(I said,) 'We're interested in doing some research. Do you have any availabilities?' At that moment, he's like, 'Yeah. Come see me in my office at such and such time and we'll talk about it.' His arms were wide open and just that opportunity was just amazing!" A 2YS described approaching her professor for a reference:

There were so many people in the class, I just didn't think he would know me specifically. He gave (the recommendation) back to me the next class. I had a decent grade in that class, but not amazing, and he still wrote like: She comes to class every day. She tries really hard. She's improving a lot'...I never talked to him before one-on-one, but I don't know, it just made my day!

We see two distinct views of FSI. Students expressed apprehension about being judged or evaluated poorly by their professors in the first set of discourse examples. They appeared unwilling to take the risk that they might ask a 'silly' question or inadvertently make a calculation error. They appeared to have talked themselves out of accessing their professors outside class. In the second set of discourse examples, students conveyed their sense of surprise at their professors' helpfulness and encouragement. Indeed, their decisions to seek out their professors generally led to highly positive outcomes. [These divergent examples reveal the complex cultural forces that introduce both actual and perceived boundaries in FSI.](#)

5.6.2 Signals of Conditions and Possibilities. Other prominent FSI patterns are associated with student discourse, one salient pattern involving conditional statements (e.g., if-then) identified in bold.

- 'If (it's) someone who does research, and if they talk about it and it peaks my interest, **(then)** I would definitely want to try to pursue that contact more.' (2YS)
- 'If I had a professor with office hours that didn't fall during my class times, and if I had a question, **(then)** I would probably go just because I also want to build the relationship with that professor. But I've struggled to find the time to do that.' (3YS)
- 'Maybe if I get a class that's smaller and the professor that I enjoy, **(then)** I might go to office hours). My junior (3rd), senior (4th) year – that would probably be when I develop those relationships.' (2YS)

The students set the conditions under which they would seek out their professors. Interestingly, they often specify that at least two conditions must hold (i.e., the word 'if' appears twice in their statements), for them to take any action. Yet the actions appearing after the word 'then' do not come across as foregone conclusions. Instead, they are typically phrased as potential actions as indicated by the use of the conditional tense. Students seem to delay any action into some non-specific future. These if-then statements are embedded with a non-trivial degree of reticence and uncertainty. A staff member noted, 'As far as (student) relationships with professors, they seem often – distant is not the right word. It's like there's this level of separation that they feel.'

A second pattern entails the use of ‘modal’ verbs such as can/could or may/might which change a statement’s meaning from a fact to a possibility; they are identified in bold

- ‘He (my professor) is someone that like, I **can** actually go to. I haven’t yet just because I haven’t had to contact him yet.’ (2YS)
- ‘I would feel weird asking a really dumb question that they **might** have covered in lecture that I just didn’t hear, and make it sound like I wasn’t paying attention even though I was.’ (2YS)
- ‘I think I would just like to see more...kids knowing their teachers, rather than it being frightening. But I don't know if that’s something that you **could** change on the student side or the teacher side.’ (3YS)

Modal words indicate FSI options students identify. Yet, there is no indication that students would take action different from their current behaviour. The third comment focuses on whether or how the status quo might shift in the direction of improved FSI.

5.6.3 Specialized Jargon Exposed. Most notable about student comments are the ways in which they generally describe the relationship between students and professors. In particular, the statements emphasize perceived hierarchical differences between the two groups, as indicated in bold. A 2YS stated: ‘I find it difficult to talk to professors and talk with advisors...If you go peer-to-peer it’s good; and (if) you go peer-to-advisor, **superior**, it’s not as good.’ Characterizing the faculty generally, another 2YS mentioned ‘the **high level** of professors. All the professors are experienced in their field.’ A third pointed out, ‘I know some students don’t want to talk to the faculty or are **scared to – scared to ask a dumb question** or whatever.’ One other 2YS remarked, ‘I wouldn’t want someone to come and ask me something...**silly** even though it’s their (the professor’s) job (to help the student).’ Similarly, a 4YS pointed out, ‘I think I was definitely **intimidated** to talk to professors... (I thought) that you went to a TA if you had homework questions. Then I guess how I thought of it was, if you had a **higher level of understanding** questions..., that’s when you would go to the professor.’

ES majors’ use of key phrases (e.g., ‘high level’) reflect their views that their professors are very bright and experienced professionals. When students are confronted with this knowledge gap, they often talk about feeling ‘scared’ or ‘intimidated.’ They denigrate their inexperience by emphasizing their ‘silly’ or ‘dumb question’ rather than viewing their questions as legitimate [for novice learners](#). The students capture the differentiation in university status between the professional advising staff and TAs on the one hand, and professors on the other. A faculty member’s view, consistent with student experiences, emphasizes the organizational culture:

When I walk into the building and I look around me ... (students) all look this particular way: they don’t seem very polished (and) they won’t smile – (appearing) **miserable** and things like that. It would be nice to walk into a building where people are much more, sort of, collegial and then our students actually see that sort of welcoming and friendliness as being a good thing.

One’s place in the status ranking of a university hierarchy is typically reinforced by particular campus locations where people tend to spend their time (e.g., work areas, lecture halls). One 3YS made the point: ‘(We have class in) very large lectures so you’re like, ‘Oh, why would they (the faculty) care about me? I’m one student out of their 400-person lecture’...I definitely have seen that **intimidation**.’ Another 3YS stated, ‘I think it’s a subconscious thing where if the professor is holding office hours in his own office, it’s a very **isolated location**...it can be a little **nerve wracking** especially just ‘cause you’re in such an **isolated situation**.’ A 2YS made a similar point in this exchange:

2YS: 'We should be taking advantage of it (seeking a professor's help) because in the future when we need those letters of recs, we're not going to get them. It's better to build the relationship now. It's just **weird** to talk to them.'

Interviewer: 'Weird?'

2YS: 'I'm not going to ask you anything else besides how to do this problem by myself. It **feels bad** going in there (to the professor's office).'

These statements indicate student discomfort in initiating contact with their professors in faculty workspaces. Office hours are typically held in the professors' offices, rooms usually filled with books and other artefacts that illustrate the professors' work and experience. Another aspect of office hours is that students typically speak with their professors one-on-one rather than in groups, which has the potential to intensify any apprehension they might have.

5.7 Faculty movement into shared spaces

Some faculty expressed concern about the low levels of FSI and have instituted or experimented with practices to strengthen it. One professor talked about his open-door policy: 'I don't really keep office hours. I let people come anytime they want, and I'll work with them anytime. I like the students.' Essentially, this faculty member has turned his office into a space for FSI. One of his students gave him a rave review: "I guess Dr. George is probably the professor I would talk to the most. He always seems very open to meetings and stuff. He made it clear ... 'You can come by my office even if it's not related to course work – if you just need help with anything.'"

Paul, another professor, recounted his experiences holding out-of-office office hours in the commons area where students often study, rest between classes, and eat.

If they (my students) were walking by and (if) they'd see other...classmates sitting there, some of them would sort of surreptitiously join in...We were sitting around a table (so) it was a bit more intimate than the faculty member and the student...There could be two or three listening to the same questions or asking similar questions about the same problem...They started working through the problem, two or three people independently...and then they'd start comparing notes. It ended up being, I thought, a good experience, and, again, by virtue of the fact that I was in their territory, it felt like they were at home, and not that they had to come out of their shell to come over (to my office).

On another occasion, Paul recalled,

I was not sure how it went from talking about the (course) material at hand to 'Where are you going on spring break?' Then we started talking about what he (the student) wanted to do in his life...This was unexpected. It was still a professional discussion and it was relevant (but for me) it was a surprising turn of events. I thought I got to know the students a little better...That's the role I want to play as a faculty member. I want to give them useful food for thought.

Other examples parallel Paul's experiment taking office hours out of the office. We engaged one faculty member, Robert, in the following exchange:

Interviewer: 'Have you ever worked in one of the tutorial rooms?'

Robert: (thinking several seconds) 'Yes, about five years ago when my TA was sick.'

Interviewer: 'What was that like?'

Robert: 'It was *fantastic!* (emphasis by Robert) There were lots of students there that day. I had so many students I had to subcontract. I took the smartest kid in the room and put him over at the other table and sent all the students with easy questions to him. That freed me up to take the students who had harder questions. We worked the whole time. It was great!'

Shared space seems to have the virtue of encouraging FSI, reducing student discomfort, and increasing faculty satisfaction in fulfilling their ‘teaching’ role.

6. Discussion

6.1 A cultural model and its ‘borderlands’

Cultural Models are useful for understanding ‘what is,’ that is, which features of the culture are prominent, depicting a group’s beliefs and experiences. This emic view sheds light on group expectations, assumptions, and patterns of behaviour combined. Researchers can ascertain cultural models by asking study participants questions, as we did. Researcher questions represent the etic view in attempts to identify and make sense of the cultural model’s attributes. Through this process, earlier researchers have described the content of particular cultural models and the consensus view derived from given cultural contexts (Author 2010; Holland and Quinn 1987; Paolisso 2007; Paolisso et al. 2013).

Figure 1 illustrates ES majors’ cultural model of academic help-seeking strategies. Consistent with our earlier research (Authors 2018b), students are routinely able to articulate three strategies when their understanding of the engineering material is imperfect or incomplete: their peers, the help room and TAs, and videos and the Internet. Moreover, their statements and our observations confirm that they put these strategies into practice to get the academic help they need and cope with the workload. Two of these strategies entail working collaboratively with others – whether in study or project groups, or in help rooms staffed by TAs; these strategies reflect ‘communitas,’ an egalitarian community spirit among students as they make their way through a gruelling programme (Authors 2018a). A third strategy, using videos and the Internet, is accessed by students on their own.

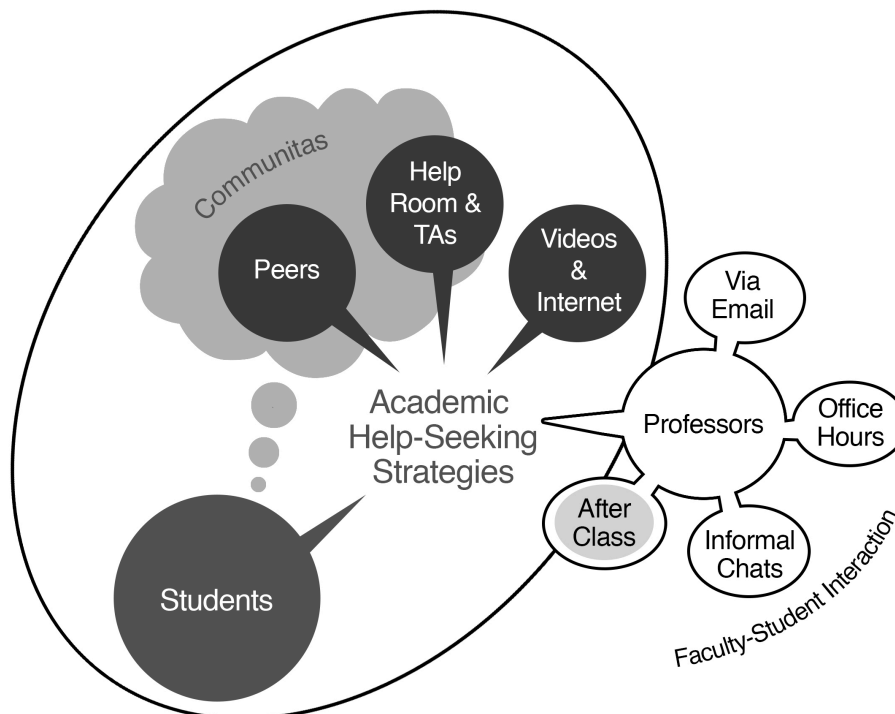


Figure 1. A cultural model of academic help-seeking strategies

This model extends our understanding of the FSI cultural pattern in three important ways, [all framed within the conceptual model of Figure 1](#). First, while we discovered the emic consensus view of academic help-seeking strategies through our questions, we also learned which content was excluded. Accessing professors does not routinely appear in the way in which ES majors *talk* about academic help-seeking. Professors are not central to how students express themselves and conceptualize their work strategies, [and they therefore appear on the periphery of the academic help-seeking strategies domain in Figure 1](#).

Second, although our earlier article detailed the infrequency of FSI during office hours (Authors [2018b](#)), we did not examine the cultural factors shaping its explanation. The lack of professor centrality to academic help seeking is an important clue to low FSI. By analysing student comments about FSI within the context of [cultural models and social distance](#), we are able to grasp and explain professor avoidance. Student statements reveal significant intimidation and discomfort, a finding consistent with Delaney's (2008) research and [with a cultural orientation based upon strong hierarchies \(Hofstede, 1991\)](#). Our student sample routinely articulated if-then statements, specifying necessary conditions prior to their initiation of interactions with faculty. Bourdieu's work on social distance and status and power differentials offers a compelling explanation for professor avoidance, that is also echoed in Godfrey and Parker's research (2010). Professors are conceptualized on the periphery in Figure 1 because ES majors have adapted to their demanding programme by relying on their peers and TAs, and the material and virtual resources (e.g., video, internet) that they are able to access by themselves (Authors [2018a](#); Authors [2018b](#)).

Third, in testing the validity of our professor avoidance concept and potential explanations of it, we found that a small proportion of students [do indeed](#) seek and receive faculty help. This discovery, resulting from the ongoing, constant-comparative aspect of our data collection, added complexity and nuance to what we were learning. [Of the four FSI types illustrated on the right-hand side of Figure 1, accessing a professor immediately after class was the most salient for student learning; it is shown as a small shaded circle labeled 'After Class' because it occurs regularly. By contrast, email contact, informal chats, and office hours are shown in small, unshaded circles because they happen infrequently and are not typically viewed by students as a common academic-help-seeking strategy; the office hours option is linked with conditionality and procrastination. Thus, student \(emic, 'insider'\) explanations for limited contact with faculty \(e.g., scheduling conflicts, inconvenience\) can be incomplete without considering them in light of a more objective \('etic', researcher\) perspective – that is, high levels of social distance between students and faculty drive these behaviours.](#)

Additionally, we direct attention to the relative placement of the professor strategy with other help-seeking strategies. Figure 1 illustrates FSI as part of the 'borderlands' of the cultural model, that is, marginal in actual practice. Activities portrayed at the borderlands can influence other elements of the cultural model. The boundary is permeable, with the potential for exogenous influences to seep in. Both positive and negative experiences in accessing faculty contribute to the mix of perspectives students possess. Together, these student assessments yield a mix of ambiguity and clarity, polarized and incongruent interpretations, and perceived alignment and misalignment on faculty accessibility and approachability. The mix is dynamic and ever-changing, with the potential to affect future academic help-seeking strategies. Indeed, cultural elements at the borderlands or periphery may be part of a future cultural model – a model of 'what could be' (Authors 2010).

6.2 Closing the gap: Spatial approaches to lessen social distance

How do we explain the apparent cultural contradiction between (1) student desire for more FSI, and (2) reports of positive, helpful (though sporadic) out-of-class experiences with faculty, in relation to low FSI within the organizational culture overall? Students quickly point out that busy and conflicting student-faculty schedules and availability of other academic resources are the key reasons; notably, students learn from and practice engineering independently and with each other in their study and project groups (Authors 2018). Yet, emic explanations are not fully satisfactory since they do not account for student reticence to contact faculty electronically or make appointments. While engineering education reform approaches stress professional skill development “through learning processes that are similar to authentic practice” (Edström and Kolmos 2014: 552), they do not capture or explain professor avoidance.

We believe that our analyses resolve the cultural contraction and offer clues about why students opt not to initiate FSI. Students’ perceived relationship with faculty is revealed in (1) their expressions of discomfort, (2) their specialized jargon to describe an actual or potential interaction (e.g., ‘intimidating,’ ‘frightening’), and (3) the conditionality of their statements (e.g., use of if-then phrasing, modal verbs). When describing professors as ‘busy’ and ‘important,’ and their own needs as ‘silly’ and ‘dumb,’ students are situating themselves as inferior to and less important than their higher status professors. Through this language, students are expressing their internalized sense of social distance between themselves and their professors. Therefore, low FSI rates can also be understood as a by-product of the hierarchal social structure that constitutes [many institutions of higher education](#). ES majors have not achieved “a more balanced power relationship” with their professors as Hernandez et al. (2015: 26) anticipated. We know that as long as communities like [R1 universities](#) are organized hierarchically (Clark 1989; Kuh and Whitt 1988), social distance will be present (Bourdieu 1985) and [low FSI rates are a likely by-product](#) (Griffen et al. 2014) [even when students perceive professors to be approachable](#). [Nonetheless, our work suggests possible improvements in FSI by managing the space in which the FSI takes place and using more student-oriented settings](#).

Since those with higher status set the boundaries of appropriate levels of intimacy and informality, they have the power to moderate their own expressions of status. As Hoffman (2014: 18) notes, “because the responsibility to support positive relationships with students lies with the instructor, instructors should attend to relationship building opportunities afforded them by the various contexts in which they engage with their students.” We identified faculty efforts to reduce faculty-student social distance, increase FSI, and make opportunities available for students to practice communication, relationship building, and other professional skills. Notable about such efforts (e.g., holding out-of-office office hours, faculty staffing of tutorial room) is that they occur outside faculty workspaces (Griffen et al. 2014). This change seems to eliminate how ES majors feel ‘weird’ in seeking faculty help and improve student satisfaction in FSI. These efforts also have important implications for practice since they can serve as models for FSI and be adapted for use in academic departments. [Moreover, this idea leverages the generally collegial nature of U.S. higher education institutions](#) (Bergquist and Pawlak 2008). [Solutions in other contexts would certainly need to align with the cultural expectations of both faculty and students—both the local culture of the institution and the national culture within which the institution is situated](#).

Faculty found they interacted with more students on more topics (e.g., beyond homework problems). For example, Robert discovered he was overwhelmed with requests for academic help. Both Paul and Robert stated they interacted with more students out-of-office than they did during traditional office hours. Paul also noted he was in student ‘territory’ which made it easier for students to approach him when they otherwise might not have. By contrast, office hours are typically hurried and focus narrowly

on a specific issue rather than on general intellectual, professional, and/or personal growth (Kuh and Hu 2001).

Locating FSI within a shared student-faculty space (e.g., lecture hall after class, conference room) or a student space (e.g., commons area, tutorial room) can help students feel comfortable and has the potential to enhance their learning. Sitting in a shared or student space encourages collaborative learning – faculty-to-student(s) and/or student(s)-to-student(s). [Moreover, students may feel comfortable enough to remain longer in this shared space working through problems, in contrast to the practice of asking specific one-off questions when meeting their instructors in their offices.](#) While intentionally switching to an ‘out-of-office office’ hours model might seem like a small change, it can help redefine the way FSI unfolds [because it decreases social distance between instructor and student.](#)

7. Conclusions

The organizational culture of ES, nested within the culture of large, research institutions generally, places primacy on research, publications, and funding. Teaching loads are lighter and FSI beyond the classroom is less common. ES organizational culture, as part of U.S. national culture, is also characterized as ‘busy.’ Faculty face high expectations to be ‘world class’ in their fields while students are expected to cope with demanding workloads. These two themes – research productivity and busyness – combine to affect interactions between professors and students. FSI frequency, duration, substantive content, satisfaction of the involved parties, and long-term impact are at risk. Students miss crucial opportunities for (1) mentorship, guidance, and advice, and (2) developing interpersonal and networking skills with the ‘adult’ technical experts in their lives. Faculty sacrifice occasions that can ‘help you have a better experience with your students’ and ‘make your job more fulfilling,’ as one professor noted. A cultural contradiction appears within a culture that does not facilitate FSI, despite a strong preference for FSI. The fragmentation of academia described by Clark (1980), particularly associated with faculty and students, continues as a robust feature.

Nevertheless, change in the cultural model of academic help-seeking behaviour, and in FSI specifically, appears to be possible. [Our data suggest that redefining](#) the spaces in which FSI typically occurs – from the professors’ office domain to common/public spaces frequented by students – has the potential to energize the organizational culture, reduce social distance between professors and students, and play a role in preparing students to interact effectively with experienced colleagues in the workplace. This effort requires faculty, as the higher status group, to take the lead in communicating and reinforcing their willingness to support students. They must make a choice to plan differently for FSI, particularly for the time each week allocated to office hours. Faculty must practice the change consistently and challenge their peers to do so. Departmental leadership must recognize, value, and reward this change in faculty practice. Otherwise, we risk losing innovative FSI models outside the classroom such that they are nothing more than a failed experiment.

FSI research is largely U.S.-driven, likely due to a combination of themes including an historical collegial culture, pedagogical improvements to ensure workplace success, and selected national values (e.g., equality, diversity). Drawing FSI comparisons with other parts of the world (e.g., Europe) is hampered because student-professor relationships are a function of the general national culture, the specific university department culture, and the characteristics of the professors and students. Moreover, the concept of office hours does not translate easily into university cultures globally. Yet, Bourdieu’s theorizing on social distance can be applied to FSI both outside the classroom (as in our data set) and in the classroom or appointment with the professor. As we have seen in our data, reducing the social distance between student and professor can lead to opportunities to improve technical learning,

enhance communication skills for students, as well as highly-valued job satisfaction for professors.

8. Limitations and future research directions

Our study centred on one engineering program at a particular university in the U.S. A larger, future study – using a similar methodology and focus on organizational culture – might involve a comparison of different educational programs in different institutions globally. [Variation exists within the culture of higher education – by department, university, and country. Exploring FSI in different organizational and country contexts would provide a richer cultural picture.](#) Similarly, researchers might draw different samples of students and faculty based on demographic characteristics (e.g., gender, ethnicity), years of study (e.g., doctoral candidates), or other identifiers. Controlling for study participant differences, say in different parts of the world, might help differentiate those students who have engaged in FSI outside the classroom from those who have not, identify variation in FSI patterns worldwide, and assess its relevance globally to improved student outcomes. It is expected that FSI around the world will vary, though status and power differentials will always be present due to role asymmetry. [Researchers also might explore FSI from alternate perspectives \(e.g., communications, sociology\) to see what those analyses yield, and the extent to which the results align, or exist in tension with, the findings presented here.](#) Finally, our study emphasized FSI, but a different study might entail faculty-staff and/or faculty-faculty interactions, and their implications for student outcomes, faculty and staff job satisfaction, and/or organizational performance.

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References

Arredondo, M. 1995. "Faculty-Student Interaction: Uncovering the Types of interactions that Raise Undergraduate Degree Aspirations." Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Orlando, FA, November 2-5.

Astin, A.W. 1993. *What Matters in College? Four Critical Years Revisited*. San Francisco, CA: Jossey-Bass.

Attinasi, L.C. 1989. "Getting In: Mexican Americans' Perceptions of University Attendance and the Implications for Freshman Year Persistence." *Journal of Higher Education* 60(3): 247-277.

Austin, A. 1990. "Faculty Cultures, Faculty Values." *New Directions for Institutional Research* 68: 61-74.

Authors. 2017.

Authors. 2016.

Authors. 2018a.

Authors. 2018b.

Authors. 2010.

Baker, V.L., M.J. Pifer, L.G. Lunsford, J. Greer, and D. Ihas. 2015. "Faculty as Mentors in Undergraduate Research, Scholarship, and Creative Work: Motivating and Inhibiting Factors." *Mentoring & Tutoring: Partnership in Learning* 23(5): 394–410.

Bentley, P.J., and S. Kyvik. 2012. "Academic Work from a Comparative Perspective: A Survey of Faculty Working Time across 13 Countries," *Higher Education* 63(4): 529-547.

Bergquist, W.H. and K. Pawlak. 2008. *Engaging the Six Cultures of the Academy*. San Francisco, CA: Jossey-Bass.

Bernard, H.R. 2011. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. 5th ed. Lanham, MD: AltaMira Press.

Bogardus, E.S. 1926. "Social Distance in the City." *Proceedings and Publications of the American Sociological Society* 20: 40-46.

Bourdieu, P. 1984. *Homo Academicus*. Stanford, CA: Stanford University Press.

Bourdieu, P. 1985. "The Social Space and the Genesis of Groups." *Theory and Society* 14(6): 723-744.

Bourdieu, P. 1989. "Social Space and Symbolic Power." *Sociological Theory* 7(1): 14-25.

Brint, S., A.M. Cantwell, and R.A. Hanneman. 2008. "The Two Cultures of Undergraduate Academic Engagement," *Research in Higher Education* 49(5): 383-402.

"The Carnegie Classification of Institutions of Higher Education," [Online]. Available: http://carnegieclassifications.iu.edu/classification_descriptions/basic.php [Accessed: 26-Nov-2018].

Chang, J.C. 2005. "Faculty-Student Interaction at the Community College: A Focus on Students of Color." *Research in Higher Education* (46)7: 769-802.

Clark, B.R. 1980. "Academic Culture." *Working Paper, YHERG-42*. New Haven, CT: Yale University.

Clark, B.R. 1987. "Conclusions." In *The Academic Profession: National, Disciplinary, and Institutional Settings*, edited by B.R. Clark, 371-399, Berkeley, CA: University of California Press.

Clark, B.R. 1989. "The Academic Life: Small Worlds, Different Worlds." *Educational Researcher* 18(5): 4-8.

Cokley, K. 2000. "Perceived Faculty Encouragement and its Influence on College Students." *Journal of College Student Development* 41(3): 348-352.

Cotton, S.R. and B. Wilson. 2006. "Student-faculty Interactions: Dynamics and Determinants." *Higher Education: The International Journal of Higher Education and Educational Planning* 51(4): 487-519.

Cox, B.E. and E. Orhevoc. 2007. "Faculty-Student Interaction Outside the Classroom: A Typology from a Residential College." *The Review of Higher Education* 30(4): 343-362.

Cox, B.E, K.L. McIntosh, P.T. Terenzini, R.D. Reason, B.R.L. Quaye. 2010. "Pedagogical Signals of Faculty Approachability: Factors Shaping Faculty-Student Interaction Outside the Classroom." *Research in Higher Education* 51(8): 767-788.

Crawley, E.F., J. Malmqvist, W.A. Lucas, and D.R. Brodeur. 2011. "The CDIO Syllabus v2.0: An Updated Statement of Goals for Engineering Education." Proceedings of the 7th International CDIO Conference, Denmark, Copenhagen, June 20-23: 2-43.

Damrosch, D. 1995. *We Scholars: Changing the Culture of the University*. Cambridge, MA: Harvard University Press.

Danielson, S., A. Kirkpatrick, and E. Ervin. 2011. "ASME Vision 2030: Helping to Inform Mechanical Engineering Education." Paper presented at the Annual Meeting of the ASEE/IEEE Frontiers in Education, Rapid City, SD, October 12-15.

Darrah, C., J.M. Freeman, and J.A. English-Lueck. 2007. *Busier than Ever: Why American Families Can't Slow Down*. Stanford, CA: Stanford University Press.

Delaney, A.M. 2008. "Why Faculty-Student Interaction Matters in the First Year Experience." *Tertiary Education and Management* 14(3): 227-241.

Department of Labor. 2015. "Engineering Competency Model." Washington, DC: Employment and Training Administration, May.

Donaldson, J.F. and S.W. Graham. 2018. "Bending or Breaking? Leaders' Perceptions of Value Tensions within the Academy." Paper presented at the Annual Meeting of the Society for Applied Anthropology, Philadelphia, PA, April 3-7.

Edström, K. and A. Kolmos. 2014. "PBL and CDIO: Complementary Models for Engineering Education Development." *European Journal of Engineering Education* 39(5): 539-555.

Eimers, M.T. 2000. "The Impact of Student Experience on Progress in College: An Examination of Minority and Non-Minority Differences." Paper presented at the Annual Forum of the Association for Institutional Research, Cincinnati, OH, May 21-24.

Einarson, M.K. and M.E. Clarkberg. 2004. "Understanding Faculty Out-of-class Interaction with Undergraduate Students at a Research University." Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Kansas City, MO, November 5.

European Commission. 2017. "On a Renewed EU Agenda for Higher Education, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Region." Brussels, Belgium, May 30, 1-12.

Ferraro, G.P. and E.K. Briody. 2017. *The Cultural Dimension of Global Business*. 8th ed. London, UK: Taylor & Francis.

- Fetterman, D.M. 2010. *Ethnography Step-by-Step*. 3rd ed. Applied Social Research Methods Series (Vol. 17). Los Angeles, CA: Sage.
- Forsman, J., R.P. Mann, C. Linder, M. van den Bogaard. 2014. "Sandbox University: Estimating Influence of Institutional Action." *PLoS ONE* 9(7): 1-9.
- Fullen, M., C. Cuttress, and A. Kilcher. 2005. "8 Forces for Leaders of Change." *Journal of Staff Development*, 26(4): 54-64.
- Garcia, A.C. 2013. *An Introduction to Interaction: Understanding Talk in Formal and Informal Settings*. London, UK: Bloomsbury Academic.
- Gee., J.P. 2014. *An Introduction to Discourse Analysis: Theory and Method*. 4th ed., London, UK: Routledge.
- Godfrey, E., and L. Parker. 2010. "Mapping the Cultural Landscape in Engineering Education." *Journal of Engineering Education* 99(1): 5-22.
- Good, M.L., M. Jones, L. Matsch, C.D. Mote, Jr. and A.G. Ulsoy. 2007. "The '5XME' Workshop: Transforming Mechanical Engineering Education and Research in the USA." 5XME White Paper, March 16.
- Griffen, W., S.D. Cohen, R. Berndtson, K.M. Burson, K.M. Camper, Y. Chen, M.A. Smith. 2014. "Starting the Conversation: An Exploratory Study of Factors that Influence Student Office Hour Use." *College Teaching* 62(3): 94-99.
- Halawah, I. 2006. "The Impact of Student-Faculty Informal Interpersonal Relationships on Intellectual and Personal Development." *College Student Journal* 40(3): 670-678.
- Hampden-Turner, C. and A. Trompenaars. 1993. *The Seven Cultures of Capitalism: Value Systems for Creating Wealth in the United States, Japan, Germany, France, Britain, Sweden, and the Netherlands*. New York, NY: Doubleday.
- Hathaway, R.S, B.A. Nagda, and S.R. Gregerman. 2002. "The Relationship of Undergraduate Research Participation to Graduate and Professional Education Pursuit: An Empirical Study." *Journal of College Student Development* 43(5): 614-632.
- Hawk, T.F. and P.R. Lyons. 2008. "Please Don't Give Up on Me: When Faculty Fail to Care." *Journal of Management Education* 32(3): 316-318.
- Helterbran, V.R. 2008. "The Ideal Professor: Student Perceptions of Effective Instructor Practices, Attitudes, and Skills." *Education* 129(1): 125-138.
- Hernandez, C., O. Ravn, and P. Valero. 2015. "The Aalborg University PO-PBL Model from a Socio-cultural Learning Perspective." *Journal of Problem Based Learning in Higher Education* 3(2): 16-36.

Hirsch, J.L. 2000. "Culture, Gender, and Work in Japan: A Case Study of a Woman in Management." *Ethos* 28(2): 248-269.

Hoffman, E.M. 2014. "Faculty and Student Relationships: Context Matters." *College Teaching*. 62(1): 13-19.

Hofstede, G. 1991. *Cultures and Organizations: Software of the Mind*. London, UK: McGraw-Hill Book Company.

Holland, D. and N. Quinn. 1987. *Cultural Models in Language and Thought*. Cambridge, UK: Cambridge University Press.

Hong, B.S. and P.J. Shull. 2010. "A Retrospective of the Impact Faculty Dispositions have on Undergraduate Engineering Students." *College Student Journal* 44(2): 266-278.

Jaschik, S. 2016. "Spoof of Drug Ad for Real Teaching Issue." *Inside Higher Ed*. <<https://www.insidehighered.com/news/2016/09/01/arizona-state-uses-spoof-drug-ad-encourage-students-use-office-hours>>.

Kleinman, A. 1980. *Patients and Healers in the Context of Culture: An Exploration of the Borderland between Anthropology, Medicine, and Psychiatry*. Berkeley, CA: University of California Press.

Komorraj, M., S. Musulkin, and G. Bhattacharya. 2010. "The Role of Student-Faculty Interactions in Developing College Student's Academic Self-Concept, Motivation, and Achievement." *Journal of College Student Development* 51(3): 332-342.

Kuh, G.D. and E.J. Whitt. 1988. *The Invisible Tapestry: Culture in American Colleges and Universities*. ASHE-ERIC Higher Education Reports No. 1. Washington, DC: Association for the Study of Higher Education.

Kuh, G.D. and S. Hu. 2001. "The Effects of Student-Faculty Interaction in the 1990s." *The Review of Higher Education* 24(3): 309-332.

LeCompte, M.D. and J.J. Schensul. 2010. *Designing and Conducting Ethnographic Research: An Introduction*. Ethnographer's Toolkit, Book 1. 2nd edition. Lanham, MD: Rowman and Littlefield Publishers.

Lee, J.J. 2007. "The Shaping of the Departmental Culture: Measuring the Relative Influences of the Institution and Discipline." *Journal of Higher Education Policy and Management* 29(1): 41-45.

Lundberg, C.A. and L.A. Schreiner. 2004. "Quality and Frequency of Faculty-Student Interaction as Predictors of Learning: An Analysis by Student Race/Ethnicity." *Journal of College Student Development* 45(5): 549-565.

Lundquist, C., R.J. Spalding, and R.E. Landrum. 2003. "College Student's Thoughts About Leaving the University: The Impact of Faculty Attitudes and Behaviours." *Journal of College Student Retention* 4(2): 123-133.

Martin, L.M. 2000. "The Relationship of College Experiences to Psychosocial Outcomes in Students." *Journal of College Student Development* 41(3): 292-301.

Milem, J.F., J.B. Berger, and E.L. Dey. 2000. "Faculty Time Allocation." *Journal of Higher Education* 71(4): 454-475.

Miller Hesed, C.D. and M. Paolisso. 2015. "Cultural Knowledge and Local Vulnerability in African American Communities." *Nature Climate Change* 5(7): 683-687, June.

National Academy of Engineering. 2005. *Educating the Engineer of 2020: Adapting Engineering Education to the New Century*. Washington, DC: National Academies Press.

National Survey of Student Engagement. 2017. "Engagement Insights: Survey Findings on the Quality of Undergraduate Education – Annual Results 2017." Bloomington, IN: Indiana University Center for Postsecondary Research.

Neave, G. and G. Rhoades. 1987. "The Academic Estate in Western Europe." In *The Academic Profession: National, Disciplinary, and Institutional Settings*, edited by B.R. Clark, 211-270, Berkeley, CA: University of California Press.

Richard H. Needle, R.H., R.T. Trotter II, M. Singer, C. Bates, J.B. Page, D. Metzger, L.H. Marcelin. 2003. Rapid Assessment of the HIV/AIDS Crisis in Racial and Ethnic Minority Communities: An Approach for Timely Community Interventions, *American Journal of Public Health* 93(6): 970-979, June.

Paolisso, M. 2007. "Cultural Models and Cultural Consensus of Chesapeake Bay Blue Crab and Oyster Fisheries." In *Anthropology and Fisheries Management in the United States: Methodology for Research*, edited by P. Inglez and J. Sepez. National Association for the Practice of Anthropology Bulletin No. 28, 123-35. Berkeley, CA: University of California Press.

Paolisso, M., P. Weeks, and J. Packard. 2013. "A Cultural Model of Farmer Land Conservation." *Human Organization* 71(1): 12-22.

Pascarella, E.T., and P.T. Terenzini. 2005. *How College Affects Students*. San Francisco, CA: Jossey-Bass.

Pike, K.L., ed. 1967. *Language in Relation to a Unified Theory of Structure of Human Behavior*. 2nd ed. The Hague, Netherlands: Mouton.

Plecha, M., 2002. "The Impact of Motivation, Student-peer, and Student-faculty Interaction on Academic Self-confidence." Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April.

Roche, M.W. 2017. *Realizing the Distinctive University: Vision and Values, Strategy and Culture*. Notre Dame, IN: Notre Dame Press.

Salmela-Aro, K., and K. Upadaya. 2012. "The Schoolwork Engagement Inventory: Energy, Dedication, and Absorption," *European Journal of Psychological Assessment* 28(1):60-67.

Schwitzer, A.M., O.T. Griffin, J.R. Ancis, and C.R. Thomas. 1999. "Social Adjustment Experiences of African American College Students." *Journal of Counseling and Development* 77(2): 189-197.

Shepherd, D.A., J.S. McMullen, and P.D. Jennings. 2007. "The Formation of Opportunity Beliefs: Overcoming Ignorance and Reducing Doubt." *Strategic Entrepreneurship Journal* 1(1-2): 75-95.

Tierney, W.G. 2014. "Creating a Culture of Innovation: The Challenge of Becoming and Staying a World-Class University." Los Angeles, CA: Pullias Center for Higher Education, University of Southern California, April.

Tinto V., 1993. *Leaving College: Rethinking the Causes and Cures of Student Attrition*. 2nd ed. Chicago, IL: University of Chicago Press.

Trotter, R.T. II and R.H. Needle. 1999. Crisis Response Teams and Communities Combat HIV/AIDS in Racial and Ethnic Minority Populations: Rapid Assessment, Rapid Response, and Evaluation Field Assessment Training Workbook. Washington, DC: U.S. Department of Health and Human Services, Office of HIV/AIDS Policy.

Ulsoy, A.G. and K-W Wang, eds. 2010. "Implementing the Recommendations of the 5xME Workshop: Report from a Workshop Sponsored by the National Science Foundation." February 5.

Vianden J., 2006. "'I Don't Need Any Help.': What First Year College Men Say about Interacting with Faculty Outside of the Classroom." PhD diss., Indiana University: Bloomington, IN.

Ziker, J.P., M. Genuchi, K. Demps, C. Smith, and P. Merrill. 2017. "The Long Lonely Job of *Homo Academicus*." Paper presented at the Annual Meeting of the Society for Applied Anthropology, Santa Fe, NM, March 28-April 1.