

Scaling Up Access to the Hidden Curriculum: A Design Methodology for Creating Undergraduate Mentoring Guides

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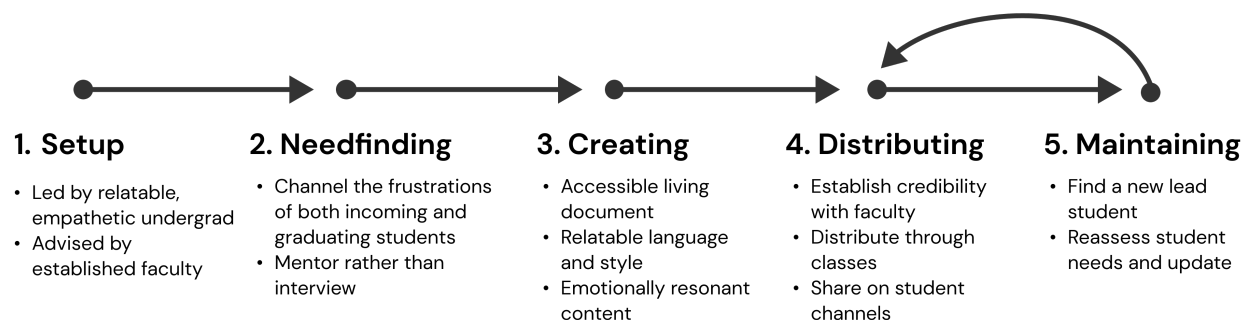


Figure 1: Our design methodology for creating student mentoring guides to teach aspects of the hidden curriculum.

ABSTRACT

The hidden curriculum consists of the unwritten rules, unspoken norms, and field-specific insider knowledge that are essential for student success but are not taught in classes. Examples include how to approach professors and prospective employers to ask for opportunities and how to gather information that is relevant to one's career goals. Students now informally learn these skills from more experienced peers, but not everyone has access to personalized one-on-one mentoring. We scaled up access to the hidden curriculum by creating a mentoring guide to advise students majoring in HCI/Design at our university. Readers have found it useful for orienting new students, helping older students who feel behind, and serving as a confidence booster. We synthesized our experiences into a five-step design methodology to help other students to create peer mentoring guides, with recommendations for 1) setup, 2) needfinding, 3) creating, 4) distributing, and 5) maintaining.

CCS CONCEPTS

• **Social and professional topics** → **Computing education**.

KEYWORDS

informal learning, hidden curriculum, peer mentoring guide

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1 INTRODUCTION

Over the past decade there has been a blossoming of scalable resources (e.g., MOOCs, YouTube videos) for teaching the formal curriculum of many subjects ranging from STEM to the humanities [7, 13]. In stark contrast, there are few resources that teach the *hidden curriculum* [9, 10, 12], which consists of unwritten rules, unspoken social norms, and informal field-specific insider knowledge that are essential for student success but are *not* taught in classes.

To illustrate the hidden curriculum, consider Alicia, a student who is the first in her family to attend college. Even though she earns good grades in her classes, she notices that her classmates know more about networking, finding resources, and gaining work experience, and thus they seem to have an easier time getting ahead in their careers. She feels frustrated since she excels in the formal curriculum by earning A's in her classes, yet she struggles to find career and networking opportunities because she does not know how to access the hidden curriculum that many of her peers seem to learn *outside* of classes.

We wanted to scale up access to the hidden curriculum for students like Alicia who do not have mentors to teach them this kind of knowledge. As a first step toward this broader goal, we created a 50-page mentoring guide for HCI/Design majors at our university [11]. Our guide has been viewed over 1,100 times so far. In this paper, we describe the methodology used to create this guide (Figure 1). This methodology can potentially enable others to create similar guides personalized for their own universities and majors.

2 BACKGROUND

Our guide aims to increase access to the *hidden curriculum* [9, 10, 12], which refers to the unwritten rules and unspoken social norms that students must learn to succeed in school. In a university setting these include norms around professional etiquette and how to take initiative by talking to professors and job recruiters.

One way to teach the hidden curriculum is via formal peer mentoring programs [3]. However, peer mentoring requires personalized (often one-on-one) contact, so it does not scale as well. Also,

students with lower self-efficacy [2] may be reluctant to take the initiative to join a peer mentoring program. In contrast, it is easier for them to get started by first reading a peer-facilitated guide.

Students also informally discuss parts of the hidden curriculum in private Facebook Groups, Discord chats [6], school-specific Reddit pages, and anonymous forums such as RateMyProfessors.com. However, not everyone knows where to look to piece together this data from multiple sources, some of which require private invitations to access. And since these sources are unvetted, they may be biased or discriminatory [5, 8]. Our method attempts to improve content accuracy by combining student opinions with faculty oversight.

3 OUR GUIDE TO THE HIDDEN CURRICULUM

Over the past year the first author created a 50-page Google Doc guide to help students navigate the hidden curriculum of HCI/Design at our university [11]. Our guide spans topics such as:

- What is HCI/Design and what kinds of jobs it can lead to.
- How to adopt a mindset to make it through the required classes so that one can reach the more interesting electives.
- When to try to petition out of certain prerequisite classes or take classes in a different order (e.g., taking project classes earlier and using those projects to apply for internships).
- How to start making a design portfolio for job hunting.
- Examples of good cold-emails to send to professors, hiring managers, and others to politely ask about opportunities.
- Insider tips for getting one’s design resume and portfolio into the hands of recruiters at career fairs.
- Advice and affirmations to build self-confidence (e.g., a section of the guide is called: “I don’t feel qualified enough to ask professors if I can be a research assistant...what do I do?”).
- Emotional reassurance and step-by-step ‘scripts’ for dealing with uncomfortable scenarios (e.g., “The chat isn’t going so well...the recruiter doesn’t seem interested in me or says I’m not eligible for positions...what do I do?”).

4 ANECDOTAL INDICATORS OF IMPACT

Since Fall 2021 we have been distributing this guide to students in our department (over 1,100 people have opened the document link so far). We conducted one-on-one interviews with 11 students (5 men, 6 women) who read the guide and expressed an interest in discussing its impact on them. We labeled their quotes with P1–P11 and added quotes labeled ‘DOC’ for comments in the Google Doc.

Overall impressions: Students liked the informal conversational style of the guide, which contrasted with the formal writing style of official university resources: “This is a lot to read, but the language is so colloquial that it’s just like I can hear another student talking to me, like it made things very digestible” (P5). P4 mentioned how the casual typographical style (which we will discuss in Section 5.3) made it feel relatable: “the emojis are good since it breaks up the text and makes it more personable and fun [...] they also sort of denote an idea: a wave emoji is a greeting and light bulb is ideas and a comment emoji helps people understand what a section is talking about” (P4).

Impact on early-stage students: Several mentioned how they felt that this guide was well suited for new students who have not taken design courses yet: “I love that [it] provides encouragement for

incoming students! It can alleviate a lot of concerns and reservations they have when deciding whether or not to pursue this path” (DOC).

From our interviews with early-stage students, P2 mentioned that “I remember seeing [the guide], freaking out, and wondering why didn’t I find this before?” P11, a first-year student, said “it was super comprehensive and [covered] questions I hadn’t even thought I had.”

Those who just started college found it useful for defining field-specific vocabulary they had not learned about yet. P1, another first-year, said, “I find the ‘how to make a portfolio’ section very helpful – I didn’t even know what a [design] case study was until I checked this guide out.” The guide also gave students actionable steps to take, such as ways to initiate contact with older classmates: “through this document I’ve been able to ask people about their career to a point where they’re like a mentor to me now” (P2).

Older students who felt behind: Some later-stage students also found it useful, especially those who transferred in from community college or entered the major later, since they felt “people in design are already into it so you feel behind” (needfinding). For instance, P3 mentioned being frustrated because “I feel like our school doesn’t have a composed complete guideline for how to choose classes, internships, or professors [...] I really needed this guide.” P3 also said how, as a new community-college transfer student, it was hard for her to ask people for advice so she found it easier to get started by reading this guide: “When I just transferred here I tried to ask my peers questions. I just feel like not everyone wanted to share their experience and some people don’t have time to do that. But this guide doesn’t take people’s time and you can find most information here.”

Validation by experienced students: Four experienced students gave us some anecdotal validation that the guide contained information they would have liked to see back when they were getting started in the major. P7 mentioned that “a lot of this was validation that I’ve been doing things correctly and that I’d been getting the advice that I needed and having the conversations that I needed to have.” More generally, graduating students confirmed that it would have been a useful resource had it existed earlier: “I wished I could have read this before going into the major” (P10), and “I like this section [about first steps to take], it’s very informative. As no one had personally told me about this, I just had to muddle through!” (DOC)

5 FIVE-STEP DESIGN METHODOLOGY

We distilled our experiences over the past year of working on our guide into a five-step design methodology, summarized in Figure 1.

5.1 Setup

Led by relatable, empathetic undergrad: The ideal person to lead this guide project is an undergraduate student who has learned to successfully navigate the major and who can empathize with the struggles of those who are just getting started. Some good choices are students who had to overcome extra challenges, such as transfer students from community colleges, those who changed majors, those who are the first in their family to go to college, or those from underrepresented demographic groups. Such students may relate better to the struggles of those who are not as visible. Also, having a single lead author allows for better unity of voice and accountability, and it reduces coordination complexity as well.

Our guide was created by the first author of this paper, a fourth-year student who started as a computer engineering major but transferred into the HCI/Design major in her third year. She was personally motivated to create this guide since she had to figure out many aspects of the hidden curriculum on her own and wanted to make it so that future students like her can have an easier time.

Advised by established faculty member: It is theoretically possible for a student to write and distribute such a guide on their own, but we believe that this effort is more likely to succeed with a faculty advisor. The ideal advisor is someone who teaches introductory courses in the major or someone who is relatively visible to new students. In our case, the faculty advisor is the last author of this paper: a professor who teaches introductory design courses and is frequently on the undergraduate education committee.

The advisor is responsible for finding a student to lead this project. In our case, the advisor found the lead student (this paper's first author) organically since she was highly engaged in coming to their office hours, discussing her journey through the major, and observing how her peers faced similar struggles.

5.2 Needfinding

After setup, the next step of our methodology is to do needfinding (a.k.a. user research) [14] to discover the needs of our target student population so that we can know what information to put into our mentoring guide. Although needfinding seems like a well-understood step in any user-centered design methodology, in this section we present two unique aspects of our needfinding process:

Channel the frustrations of both incoming and graduating students: Since this guide is meant for less experienced students, that seems like the appropriate target for needfinding interviews. But we found that it was also useful to talk to graduating senior students and recent alumni to get their retrospectives. We met with:

- 17 incoming students who were new to the major. We found these students via the faculty advisor asking their colleagues to post a recruitment message to the Piazza discussion forum of the main introductory classes that enroll many new incoming students. We focused these conversations on any concerns or fears that incoming students had when first entering and trying to navigate through the major.
- 11 graduating or recently-graduated students, whom we found via the advisor's former undergraduate TAs and other alumni who excelled in courses. We focused these conversations on themes like *"what I would tell my younger self."*

Mentor rather than interview: We recommend *not* framing these chats as 'formal research interviews' but rather as informal peer mentoring and listening sessions. When needfinding with new design majors, the first author elicited information from each student about what confusions they have about the major. She then provided personalized advice and emotional reassurance so that they came away feeling like they had a next step to take to address their concerns. When talking to senior students, the first author asked what they wish they would have known when they started. To offer some immediate value to them, she echoed their concerns by sharing her own related frustrations, offering empathy, a listening ear, and a personal promise that their lived experiences would contribute to a guide that can help future generations of students.

5.3 Creating

After the 28 needfinding chats, the first author wrote a draft of the guide by combining frequently-asked questions from incoming students (N=17) with advice collected from both graduating students (N=11) and her personal experiences. We showed this draft to students in several courses, including the last author's course, where we collected hundreds of pieces of feedback that we incorporated. Here are our recommendations for creating such a guide:

Accessible living document: First we recommend creating the guide using a straightforward widely-adopted tool like Google Docs. Using Google Docs lets us quickly edit the guide's contents and have it be viewable by anyone with the URL. It also displays well on mobile devices, which is how many students read documents. And our target reader audience of undergraduates is already accustomed to Google Docs as a format because many started using it in high school or earlier for both class assignments and personal writing. Besides ease of access, another benefit of Google Docs is how it makes it easy to collect targeted feedback on specific guide sections.

Relatable language and style: We recommend writing with a language and style that current undergraduate students can relate to. For example, we used fonts, emojis, and formatting styles that look like what students are used to seeing on modern blogging platforms such as Medium rather than on university websites.

We wrote using a conversational tone that addresses readers like a peer rather than sounding like an authority figure. For instance, sparingly using colloquial language like all-caps and multiple punctuation marks (e.g., "WHAT ARE RESEARCH PAPERS???") can convey relatable feelings of confusion. To give more of an authentic voice, we also used some actual questions from students as section titles, such as *"Career fairs seem big and scary. Got any tips?"*

Stylistically, we split long paragraphs of text into skimmable two-column tables such as "Instead of [this] → Say [that]":

I know a bit about design and feel like the advice I get is all the same...how do I get more specialized advice?	
Here are some ways to receive more targeted feedback:	
Instead of	Say
"Here's my current design/paper/project draft. What do you think?"	"This is my design/project/paper draft. I'm having trouble with this specific section/these choices. I don't know if it needs this interaction, this feature, or this visual, what are your thoughts on these design decisions?"
"Can you critique my portfolio?"	"Can you look at this section of my portfolio? I feel like my wording is kind of passive. What do you think and how would you improve that?"
"I'm not sure what to do next in this project"	"So far I have come up with the problem statement and gathered this context, what do you think my next steps should be?"
"Do you have any design work for me to do?"	"I finished the previous assigned work and have some extra time. I'm interested in learning about X design topic. Do you have any related work?"

Emotionally resonant content: The students we talked to found it hard to be motivated by impersonal websites created by the school administration. So we prioritized making our guide into something that would *resonate with students on an emotional level* so that it felt like their concerns were being validated and that they could be empowered to take action to move past their current obstacles.

For example, here we use a quote from a former TA to encourage readers to get started on making a design portfolio right away:

I don't feel ready to make a portfolio...what do I do?

It's important to start a portfolio **even before you feel ready**. If this just means having a blank website with contact information, it's a great start!

There is so much to choose and you want to express yourself best. Portfolios come best in iterations so it's okay if it's not advanced level the first time – it will get better over time. Constantly improving your portfolio will make you feel proud!

"You will always have the concern you won't be good enough but you will miss 100% of job applications if you don't have a portfolio" – Rajiv, former Design TA

And here we address the common feelings of rejection that everyone faces during their internship and job application process:

I'm not feeling motivated...How do I deal with "ghosting" or rejection?

The internship hunt is a PROCESS!

Know that there's a company wanting to accept you! You may be feeling this kind of being in *limbo* but you **will** keep iterating on your own process. Some company somewhere is growing and it's hiring! Keep working on yourself, your projects, and trust that you are the perfect fit somewhere and some company is right for YOU!

You might not get hired one summer. This doesn't reflect anything of you -- you're trying your best. Don't let it go to waste: do projects, do self-care, learn about what you're passionate about.

5.4 Distributing

Establish credibility with faculty: Although students should create these kinds of guides, we believe faculty are essential for distributing them widely and equitably. In our case, the first author gave a talk about our guide at an HCI/Design research meeting where almost a dozen design faculty attended. Several of these faculty expressed enthusiasm about sharing the guide in their classes. We believe this face-to-face contact is critical for establishing trust. In contrast, sending a mass cold-email to faculty to advertise this guide could come off as insincere or just get lost in their inboxes.

Distribute through classes: In our experience, the way to most equitably publicize this guide is via introductory and lower-division courses. This achieves the goal of equity better than online distribution since *all students in the department must take introductory-level courses and thus get a more equitable chance to see our guide*.

Share on student channels: The lead student can also distribute the guide directly to their peers via student channels (e.g., organization mailing lists, Facebook groups, Discord chats). The caveat here is that this may not be the best way to reach the students who need the guide the most. This is because those students who know to regularly monitor the (often-private) social media groups are already more 'tuned in' to relevant trends and more 'in the know.' The purpose of this hidden curriculum guide is to reach students who are *not already tapped into existing informal networks*, so they might not stumble across these social media posts on their own. One way to overcome this limitation is to proactively distribute to mailing lists for groups such as first-generation college students.

5.5 Maintaining

The author of such a mentoring guide will likely be a 3rd- or 4th-year undergraduate student since they are more experienced in

navigating the major. While the contents will remain relevant for another year or two, what happens to the guide after they graduate? Here are two recommendations for maintaining it longer-term:

Find a new lead student: The first maintenance task is to find a new lead student. One way to organically find such a person is by seeing who has given constructive feedback on the guide or talked to the faculty advisor about it. The advisor's own undergraduate TAs could also make for good candidates. We are now in the process of finding a new lead and have some candidates in mind from amongst those who have expressed enthusiasm about our guide.

Reassess student needs and update: We do not envision maintenance to be nearly as much work as first creating the guide. The responsibilities of the new lead are to periodically reassess student needs and do a 'vibe check' to see if any content should be updated in light of recent department changes or field-specific trends. For instance, certain memes or pop culture references in the guide might get outdated in a few years and need to be changed.

6 LIMITATIONS

One limitation of our approach is that a student-led guide may contain subjective or inaccurate information (a risk shared by other peer-created resources such as wikis or forums). A complementary approach that other researchers adopt is to use data-driven methods such as curriculum analytics [4] or course selection visualizations [1] to reveal what prior cohorts of students have done. Another limitation is that we do not know how well our design methodology generalizes to other contexts since we have created only one guide for our major so far. Finally, although this guide can potentially scale up *access* to the hidden curriculum, the process of creating such a guide may not be scalable since it requires a lot of hands-on customized effort on the part of the lead student.

7 CONCLUSION: BROADER IMPLICATIONS

We presented a mentoring guide to help students navigate our university's HCI/Design major. Our guide reveals the hidden curriculum of unspoken social norms and field-specific insider knowledge that are essential for success but are not taught in courses. So far it has been viewed over 1,100 times, and students have given us early feedback about the ways in which it has been useful for them.

The broader implications of our project for Learning@Scale is that it takes early steps toward scaling up peer mentoring. Over the past decade there have been many successful efforts at scaling up the formal curriculum of course content for all sorts of subjects. But what remains challenging is giving more people access to personal mentorship that is critical for school and career success but is not formally taught. Ideally everyone would have a mentor to personally advise them, but this sort of peer-written guide is one way to get started even without an available mentor.

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